reface CP

SERVICE MANUAL



reface CP

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SY 012147

YAMAHA
HAMAMATSU, JAPAN

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IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING : Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT : This presentation or sale of this manual to any individual or firm does not constitute authorization certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING : Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground bus in the unit (heavy gauge black wires connect to this bus.)

IMPORTANT : Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

WARNING: This product contains chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specification equal to those originally installed.

SAVING DATA



Be sure to perform it

Saving and backing up your data

Some data items are automatically saved as backup data in the internal memory even if you turn the power off. Saved data may be lost due to malfunction or incorrect operation. Save important data to external device such as a computer.

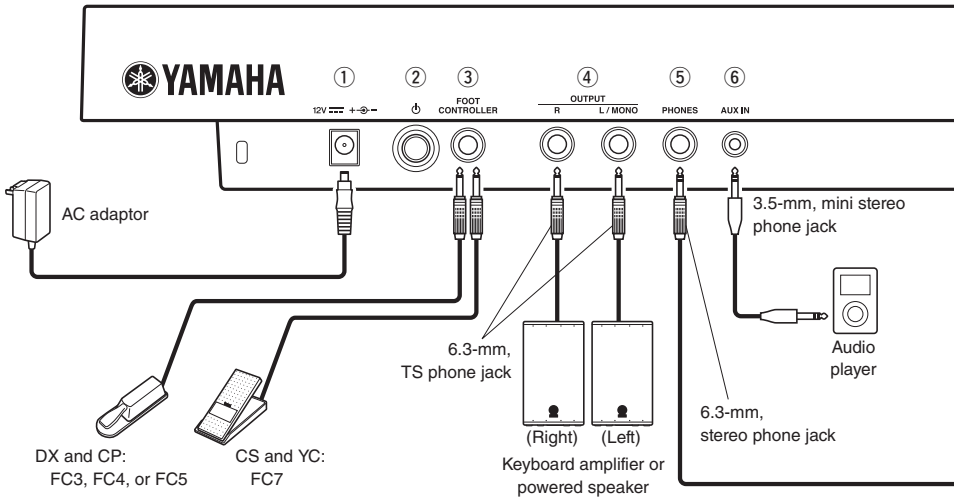
SPECIFICATIONS

Item			Details			
			reface CS	reface DX	reface CP	reface YC
Keyboard		Number of Keys	37 keys			
		Type	HQ (High Quality) Mini Keys			
		Initial Touch	Yes			
Tone Generation		Tone Generation Technology	AN (Analog Physical Modeling)	FM	SCM (Spectral Component Modeling) + AWM2	AWM (Organ Flutes)
		Number of Polyphony (Max.)	8	8	128	128
Voices		Number of Types	5	12 (Algorithms)	6	5
		Number of Voices	—	32	—	—
		Effects	Distortion, Chorus/Flanger, Phaser, Delay	Distortion, Touch Wah, Chorus, Flanger, Phaser, Delay, Reverb	Drive, Tremolo, Wah, Chorus, Phaser, Digital Delay, Analog-Type Delay, Reverb	Rotary Speaker, Distortion, Reverb
Phrase Looper			Yes	Yes	—	—
Display		Type	—	Full Dot LCD (128 x 64 dots)	—	—
Connectivity		DC IN	DC IN (12 V) jack			
		Headphones	PHONES (6.3 mm, stereo phone jack)			
		OUTPUT	OUTPUT L/MONO, R (6.3 mm, TS phone jack, unbalanced)			
		Pedal	FOOT CONTROLLER	SUSTAIN	SUSTAIN	FOOT CONTROLLER
		AUX IN	AUX IN (3.5 mm, mini stereo phone jack)			
		USB TO HOST	USB (TO HOST)			
		MIDI	MIDI (mini-DIN IN/OUT)			
Amplifiers/ Speakers	Amplifiers		2 W x 2			
	Speakers		3 cm x 2			
Power Supply	Power Supply	Adaptor	PA-130 or an equivalent recommended by Yamaha			
		Batteries	Six "AA" size batteries or Ni-MH rechargeable batteries			
	Power Consumption		6W (When using PA-130 power adaptor)			
	Auto Power Off		Yes			
Size/ Weight	Dimensions (W x D x H)		530 (W) x 175 (D) x 60 (H) mm (20 7/8" x 6 7/8" x 2 3/8")			
	Weight		1.9 kg (4 lbs, 3 oz) (not including batteries)			
Included Accessories			AC adaptor*, MIDI breakout cable, Owner's Manual, Warranty* *May be included depending on your locale			

* The contents of this manual apply to the latest specifications as of the printing date.
Since Yamaha makes continuous improvements to the product, this manual may not apply to the specifications of your particular product. To obtain the latest manual, access the Yamaha website then download the manual file. Since specifications, equipment or separately sold accessories may not be the same in every locale, please check with your Yamaha dealer.

■ PANEL LAYOUT

Functions of Rear Panel Components



①DC IN jack

For connecting the included AC adaptor.

②[⏻] (Standby/On) switch

For setting the instrument to standby (▬) or turning it on (▬).

③[FOOT CONTROLLER] or [SUSTAIN] jack

● reface CS and reface YC:

For connection of a separately sold foot controller (FC7) to adjust the volume.

● reface DX:

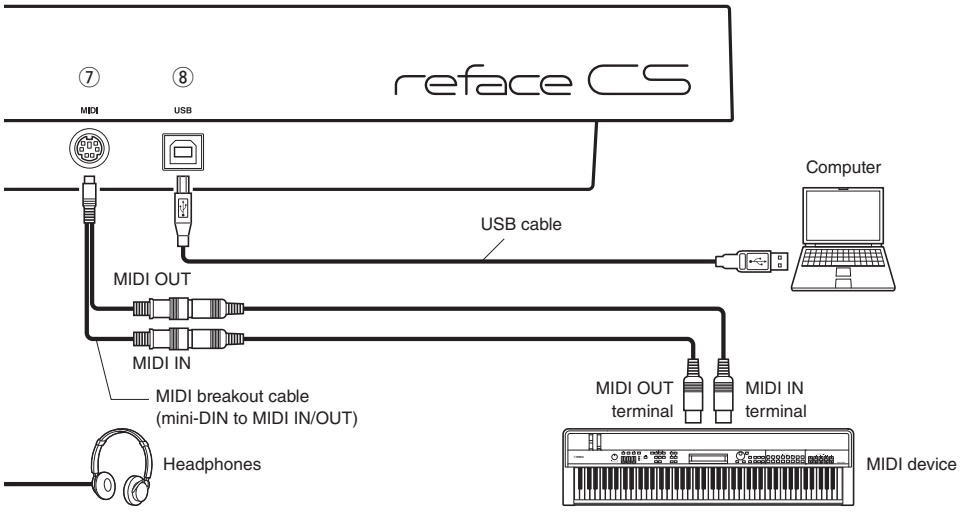
For connection of a separately sold foot switch (FC4 or FC5) to add sustain. Notes played while the foot switch is operated will sustain for longer than normal after you release the corresponding keys.
When a separately sold FC3 foot pedal is connected, MIDI messages for the half-damper position can be transmitted to any other connected MIDI device or computer. To do so, change "SUSTAIN" on the instrument's System Settings screen to "FC3." Please note that this instrument's sounds are not affected by the half-damper effect.

● reface CP:

When a separately sold foot pedal (FC3) is connected, a sustain effect corresponding to the half-damper position can be applied. Notes played while the foot switch is operated will sustain for longer than normal after you release the corresponding keys. The degree to which the foot switch is applied will control the length of sustain.
Furthermore, when a separately sold foot switch (FC4 or FC5) is connected, a sustain effect unrelated to the half-damper position can be applied. In such a case, turn on the instrument by pressing the power button while holding down the G2 key on the keyboard. Multiple lamps on the front panel will flash, and the instrument's pedal setting will change to "FC4/5."

- In this manual, the term "FC3" refers to the FC3 and all other equivalent products, such as the FC3A.
- In this manual, the term "FC4" refers to the FC4 and all other equivalent products, such as the FC4A.

The illustration shows a reface CS but applies to all models.



④ OUTPUT [R]/[L/MONO] jacks

For connecting keyboard amplifiers or powered speakers. The output from these standard stereo phone jacks is identical to that from the instrument's built-in speakers. If mono output is required, only the [L/MONO] jack should be connected.

⑤ [PHONES] jack

For connecting a pair of stereo headphones with a standard stereo phone plug (6.3-mm). If you wish to connect earphones or headphones having a mini stereo phone plug (3.5-mm) to this instrument, you will need to use a 3.5 mm to 6.3 mm adapter.

The instrument's built-in speakers automatically stop producing sound when headphones are connected to this jack. However, the OUTPUT jacks will continue to output the same sound as the [PHONES] jack.

⚠ CAUTION

To prevent hearing loss, avoid using headphones at high volumes for extended periods of time.

⑥ [AUX IN] jack

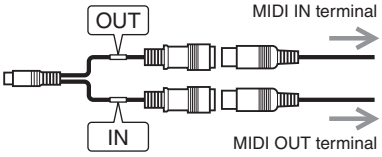
For connecting other audio equipment. The sound output from connected audio equipment can be mixed with that of this instrument.

NOTE

Adjust the volume of the connected audio equipment to balance the volumes of the two devices.

⑦ [MIDI] terminal

For connecting other MIDI devices via the included MIDI breakout cable and standard MIDI cables (sold separately). MIDI messages can be both transmitted and received via this terminal.



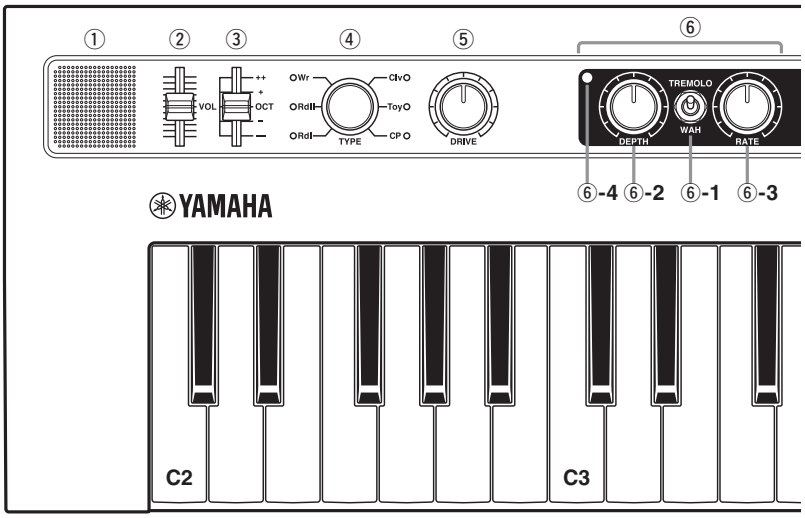
⑧ [USB] terminal

For connecting a computer or a smart device such an iPhone or iPad by using a USB 1.1 or 2.0 cable. MIDI messages can be both transmitted and received via this terminal.

NOTE

For details on how to connect an iPhone or iPad, refer to the "iPhone/iPad Connection Manual," which is available from the Yamaha web site.

Functions of Front Panel Components



①Built-in speakers

For outputting the instrument's sounds. If you do not want sound to be output from these speakers, turn the instrument on while holding down the D2 key on the keyboard. No sound will be output from the built-in speakers when headphones are connected.

②[VOL] (Volume) slider

For adjusting the instrument's overall volume. When you move the slider up, the sound output from the built-in speakers, the OUTPUT [R]/[L/MONO] jacks, and the [PHONES] jack will become louder.

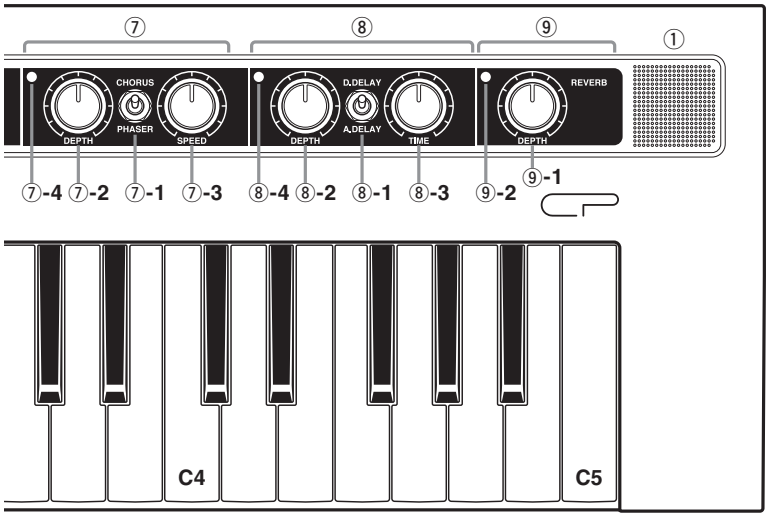
③[OCT] (Octave) slider

For transposing the keyboard in units of 1 octave. For example, when set to "+," the note C4 will be produced when you play C3 on the keyboard (see the illustration above). The available settings are "++" (2 octaves up), "+" (1 octave up), "OCT" (no change in pitch), "-" (1 octave down), and "--" (2 octaves down).

④[TYPE] knob

For selecting different voice types.

RdI	Sets a distinctive electric piano voice from the early 1970s. This type of electric piano is characterized by a dark, heavy sound with sustained notes. It sounds particularly good when combined with the phaser effect and was widely used in 70s jazz, R&B, and soul.
RdII	Sets a distinctive electric piano voice from the late 1970s. Compared with the RdI, it has a characteristically bright, high-fidelity sound. It sounds particularly good when combined with the chorus or phaser effect and was primarily used in the pop ballads and fusion music of the 80s.
Wr	Sets a distinctive electric piano voice that became famous in the late 1960s. This type of electric piano is notable for the gentle attack and fast decay of flat metal reeds. Often combined with a tremolo effect, it was widely used in 70s pop, R&B, and soul.



Clv	Sets the voice of a struck-string type of electric keyboard that arrived on the scene in the 1970s. Its electric guitar-like sound is highly distinctive. This voice works very well with a wah effect and was primarily used in the funk and rock music of the 70s.
Toy	Sets the voice of a vintage toy piano from the 1970s. This setting combines a bright, undulating tone with the distinctive noisy keyboard of toy pianos. Although originally developed as a child's toy, this type of instrument has recently found its way into popular music thanks to its highly unique sound.
CP	Sets the voice of the Yamaha CP80 electric grand piano of the late 1970s. The CP80 was notable for a fast attack similar to that produced by using compression, and also for its unique harmonic overtones. It works very well with a chorus effect and was used in the pop, rock, jazz, and fusion music of the 80s.

⑤ [DRIVE] knob

For distorting the sound, thereby reproducing the effect of a guitar amp or an old radio. Turning the knob clockwise increases the amount of distortion and produces a brighter tone. When the knob is turned all the way counter-clockwise, no effect is applied to the sound.

⑥ TREMOLO/WAH

The reface CP features four Insert Effects arranged in series. The TREMOLO/WAH section lets you add a tremolo or wah effect.

● TREMOLO

Modulates the volume in a cyclical fashion.

When [TYPE] is set to Rdl, Rdll, or CP:

The sound will be cyclically panned left and right in stereo.

When [TYPE] is set to Wr, Clv, or Toy:

The volume will be cyclically varied up and down.

● WAH

Modulates the filter cutoff frequency based on the input volume. This produces a cyclical change in tone.

⑥-1. [TREMOLO/WAH] switch

For selecting whether to add tremolo (up position), add wah (down position), or pass the sound through unaffected (middle position).
The lamp (⑥**-4**) will light up when either tremolo or wah is selected and go out when the sound passes through unaffected.

⑥-2. [DEPTH] knob

Increases the effect on the sound when turned clockwise.

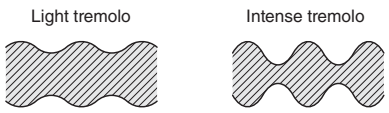
● With tremolo

When [TYPE] is set to Rdl, Rdll, or CP:

Adjusts the degree to which the sound is modulated left and right.

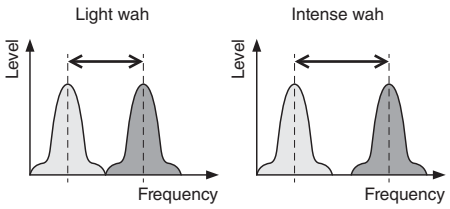
When [TYPE] is set to Wr, Clv, or Toy:

Adjusts the degree to which the volume is modulated.



● With wah

Adjusts the sensitivity of the wah filter.

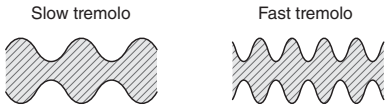


⑥-3. [RATE] knob

Increases the effect on the sound when turned clockwise.

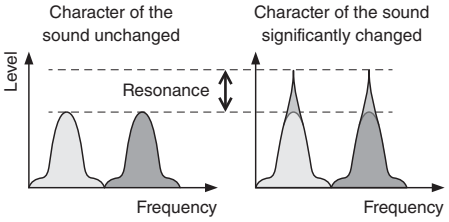
● With tremolo

Adjusts the speed of modulation.



● With wah

Adjusts the resonance offset value. This changes the character of the modulated sound.



⑦CHORUS/PHASER

This section lets you add a chorus or phaser effect.

● CHORUS

Adds richness and depth, making it sound like multiple tone generators are simultaneously outputting the same voice. This makes the voice sound much wider.

● PHASER

Creates a highly distinctive sweeping, swelling tone by shifting the phase of the sound and mixing it back into the original signal.

⑦-1. [CHORUS/PHASER] switch

For selecting whether to add chorus (up position), add the phaser effect (down position), or pass the sound through unaffected (middle position). The lamp (⑦**-4**) will light up when either chorus or the phaser is selected and go out when the sound passes through unaffected.

⑦-2. [DEPTH] knob

For adjusting the degree to which the chorus or phaser effect is applied. Turn the knob clockwise to increase the depth of the effect.

⑦-3. [SPEED] knob

For adjusting the speed at which the sound undulates. Turn the knob clockwise to increase the speed.

⑧D. DELAY/A. DELAY (Digital Delay / Analog Delay)

This section lets you add either digital or analog delay to the sound.
Delay effects create a delayed version of the input signal, and as such, they can be used for many different purposes, such as creating a sense of spaciousness or thickening a sound.

● D. DELAY (Digital Delay)

Compared with analog delay, this effect produces delay sounds that are more exact replicas of the original.

● A.DELAY (Analog Delay)

Simulates the warm delay sound of analog gear.

⑧-1. [D.DELAY/A.DELAY] switch

Set this three-position switch to the up position for Digital Delay, to the down position for Analog Delay, or to the middle position to pass the sound through unaffected.
The lamp (⑧**-4**) will light up when either digital or analog delay is selected and go out when the sound passes through unaffected.

⑧-2. [DEPTH] knob

For adjusting the degree to which delay is applied. Turn the knob clockwise to increase the depth of the effect.

⑧-3. [TIME] knob

For adjusting the length of the delay. Turn the knob clockwise to increase the length.

⑨REVERB section

This section can model complex reverberation to artificially create a sense of space.
The lamp (⑨**-2**) will light up when reverb is applied and go out when the sound passes through unaffected.

⑨-1. [DEPTH] knob

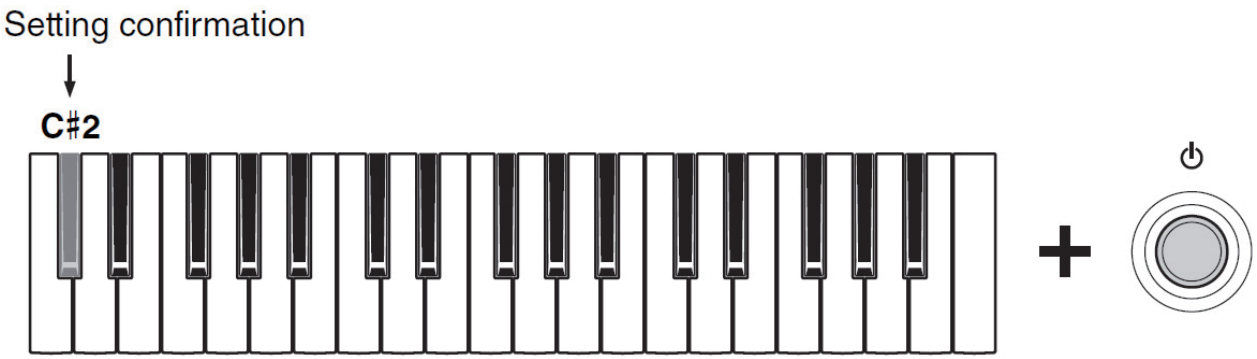
For adjusting the degree to which the reverb effect is applied. Turn the knob clockwise to increase the depth of the effect. When the knob is turned all the way counter-clockwise, no effect is applied to the sound.

■ SETTING CONFIRMATION

● Operation

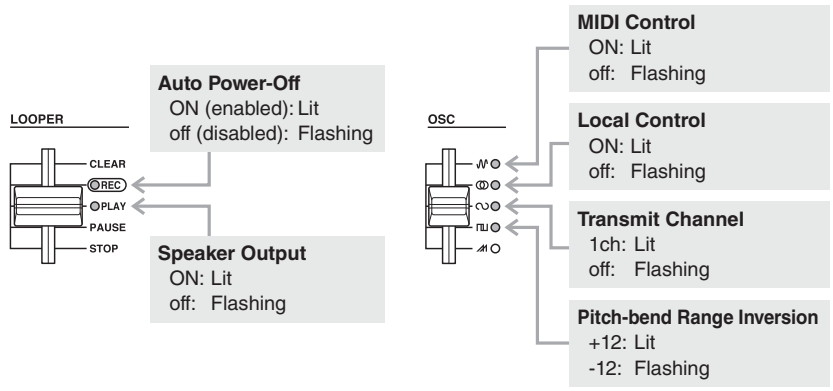
To confirm the current setting of the keyboard, hold down the **[C#2]** key and press the ⏻ (Standby/On) switch.

* ***If the instrument is turned on, you will need to turn if off once to confirm the setting in this way.***



● Display

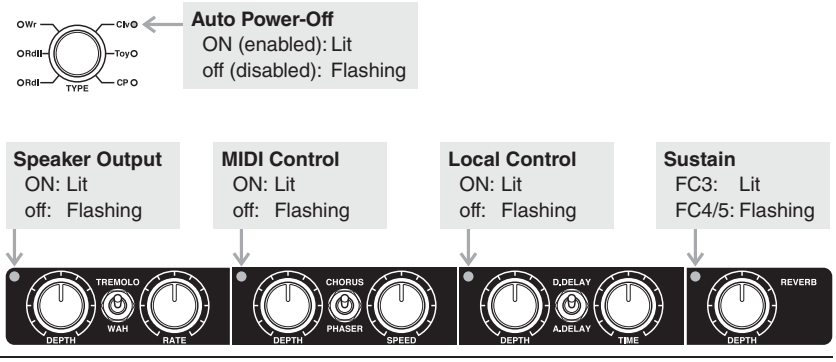
CS

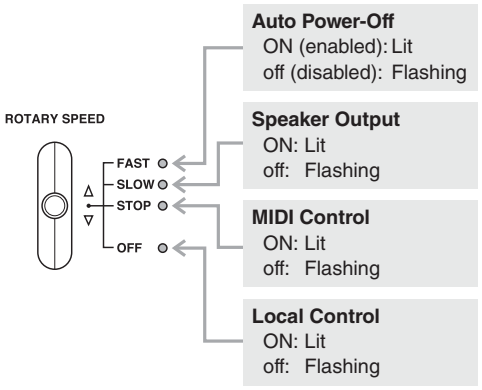


DX

Presented on-screen

CP



YC	ROTARY SPEED FAST SLOW STOP OFF **Auto Power-Off** ON (enabled): Lit off (disabled): Flashing **Speaker Output** ON: Lit off: Flashing **MIDI Control** ON: Lit off: Flashing **Local Control** ON: Lit off: Flashing

■ FACTORY RESET

Restoring the Factory Default Settings (Factory Reset)

When you do a Factory Reset, all parameters will be returned to their factory default settings.

NOTICE

- **reface DX only:**
  All settings stored on the instrument by using the [FUNCTION] button will be overwritten with their factory defaults when you do a Factory Reset.

Using the Factory Reset Function

① While holding down the rightmost key on the keyboard, turn on the instrument.

● reface CS, reface CP, and reface YC

The instrument's lamps will flash.

● reface DX

The message "Factory reset" will be displayed on-screen.

When the Factory Reset has finished, the lamps will stop flashing or the message will disappear.

② When the lamps stop flashing or the message is no longer displayed, remove your finger from the keyboard.

● reface DX:

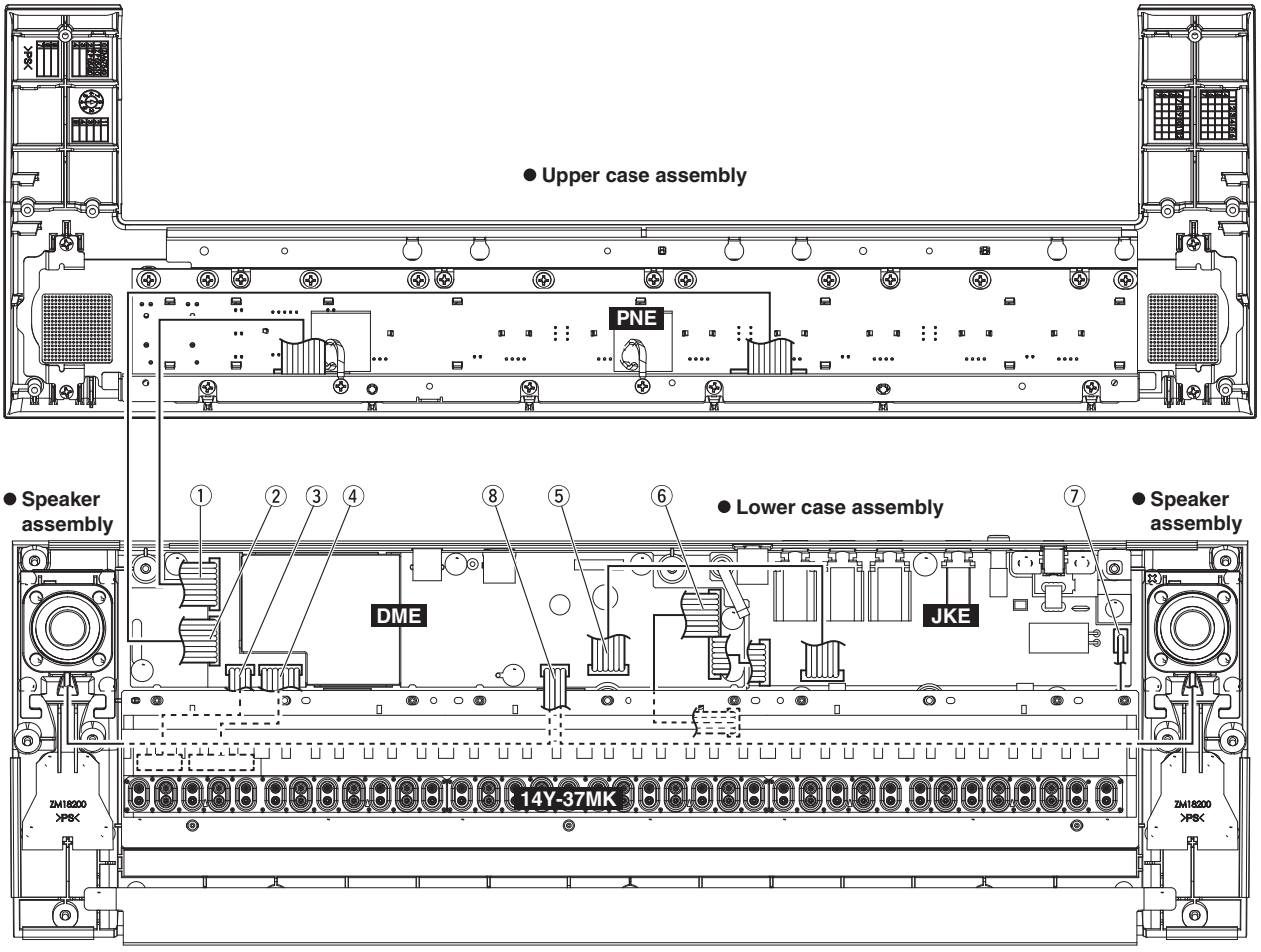
You can also use the [FUNCTION] button to do a Factory Reset.

① Select the Job screen by pressing the [FUNCTION] button.

② Tap the "FCTRY RESET" switch.
A confirmation message will be displayed on-screen.

③ Tap the "YES" switch.
All parameters will be returned to their factory default settings.

■ CIRCUIT BOARD LAYOUT & WIRING



No.	Unit Name	Parts No.	Connector Assembly	Destination		Remarks
①	UPPER CASE	(ZN09410)	DM-PN-1	DME/O : CN600	PNE/O : CN100	15P, L=100
②	ASSEMBLY	(ZN09420)	DM-PN-2	DME/O : CN605	PNE/O : CN101	14P, L=300
③	LOWER CASE ASSEMBLY	(ZN09440)	DM-MK-1	DME/O : CN603	14Y-37MK : CN2	7P, L=65
④		(ZN09450)	DM-MK-2	DME/O : CN604	14Y-37MK : CN1	12P, L=65
⑤		(ZN09370)	DM-JK-1	DME/O : CN434 (11P)	JKE/OF : CN101 (9P)	L=210
⑥		(ZN09380)	DM-JK-2	DME/O : CN431 (16P)	JKE/OF : CN100	12P, L=40
					JKE/OF : CN106	5P, L=65
⑦		(ZN09530)	JK-BATT	JKE/OF/A : CN103	Battery terminal (+/-)	3P, L=255
⑧	SPEAKER ASSEMBLY	(ZN09430)	DM-SP	DME/O : CN432 (4P)	Speaker L	2P, L=260
					Speaker R	2P, L=380

* The parts with “( )” in “Parts No.” are not available as spare parts.

■ DISASSEMBLY PROCEDURE

Caution:

- After removing the ribbon cable from the rib during disassembly, be sure to always reattach the ribbon cable to its original position.
- When new parts are installed for replacement, make sure that cushions and nonwoven fabric cloth are restored to their original positions.
- Use a no. 0 or no. 1 Phillips screwdriver to remove screws [250] and [370].

1. Upper case assembly (time required: About 3 minutes)

1. Remove eight screws [130], three screws [140] and three screws [150]. (Fig.1)
2. Lift up the upper case assembly, and open it in the direction of the arrow in Fig.2. (Fig.2)
3. Remove one screw [150], and remove the upper case assembly. (Fig.2)

●Bottom view

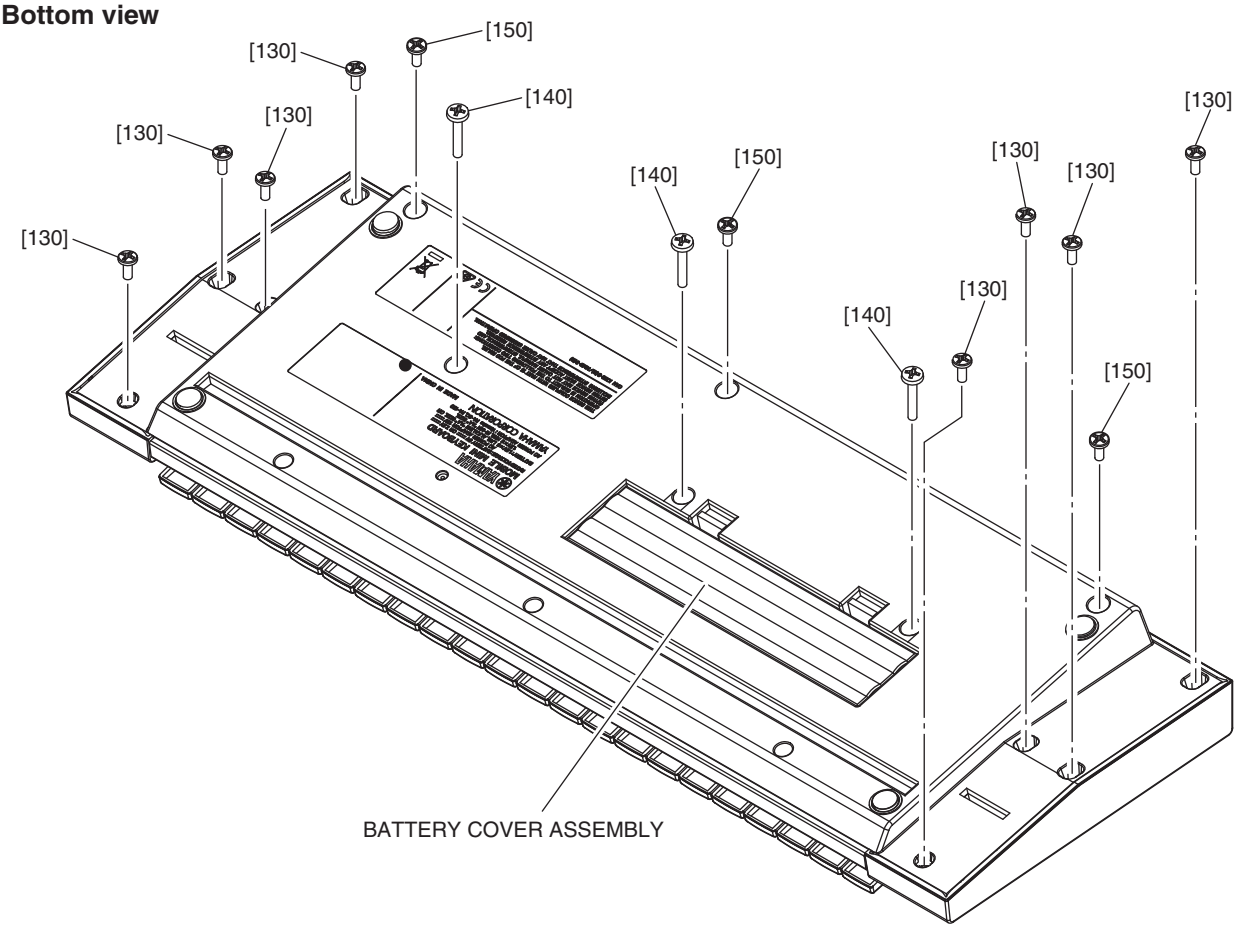


Fig.1

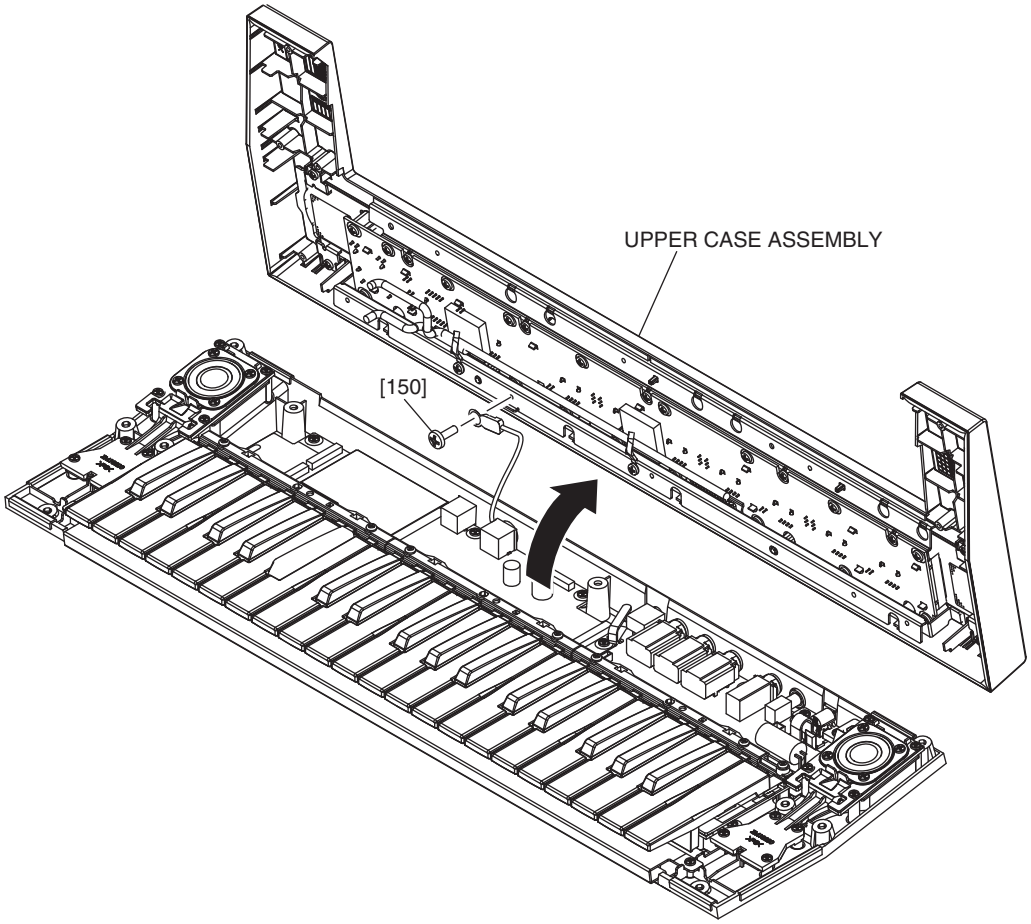


Fig.2

2. Disassembling the keyboard (time required: About 11 minutes)

1. Remove the upper case assembly. (See "procedure 1")

- White keys and black keys

* ***The white and black keys are grouped in single octave sets ([C2] - [B2], [C3] - [B3]) starting from the left side and together with a set of white and black keys ([C4] - [C5]) on the right consist of a total of three sets. (Fig.3)***

1. Remove each set of white and black keys [C2] - [B2] and [C3] - [B3] by taking off two screws [70] for each set. (Fig.3) To remove the keys, release the two hooks at the rear of the black keys by raising them, and then lift up the white and black keys while pulling them towards you a little at a time. (Fig.3)
2. Remove the [C4] - [C5] white and black key set by taking out three screws [70]. Then release the hooks in the same way as described above. Remove them by pulling them towards you. (Fig.3)

* ***After removal, reassemble all the white and black keys by first mounting the [C3] - [B3] white and black key set and then mount the remaining white and black keys. Tighten screws number 1 to 7 in stated order in Fig.4. (Fig.4)***

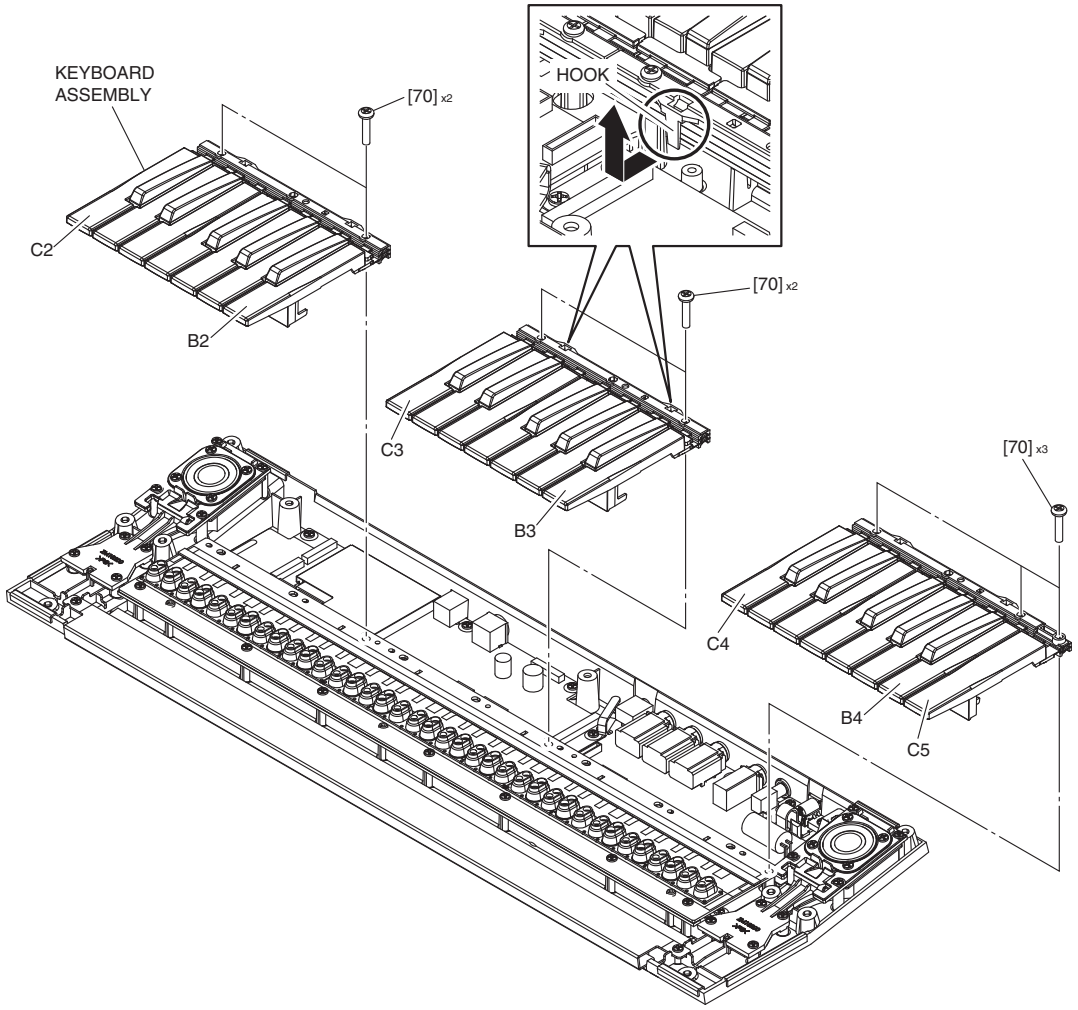


Fig.3

●**Top view**

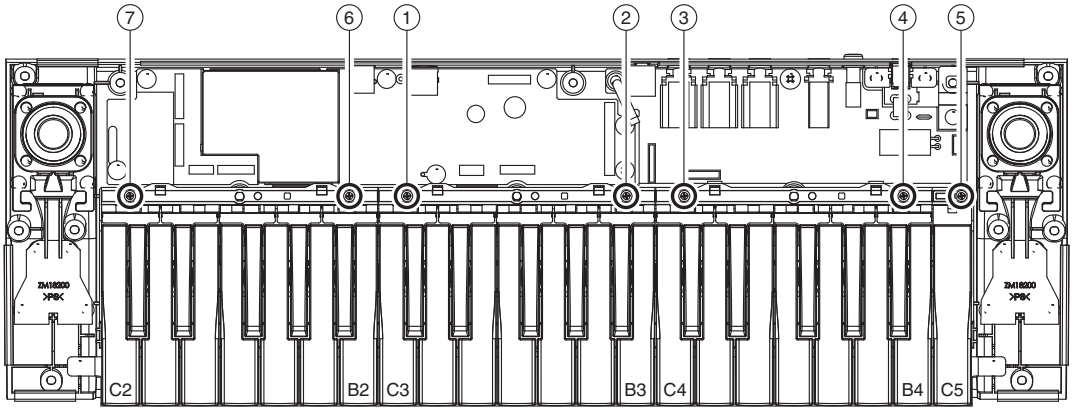


Fig.4

- Rubber contacts
  1. Remove the white and black keys of the rubber contacts you want to remove. (See "White keys and black keys" and Fig.3.)
  2. Remove the respective rubber contacts (Fig.6)

* ***When you reinstall the rubber contacts, place the contacts so the side with the triangular ( ) mark faces the front. (Fig.6)***

* ***Make sure that the rubber contacts lie flat against the board. Use a paper clip or the like to press them into position. (Fig.5)***

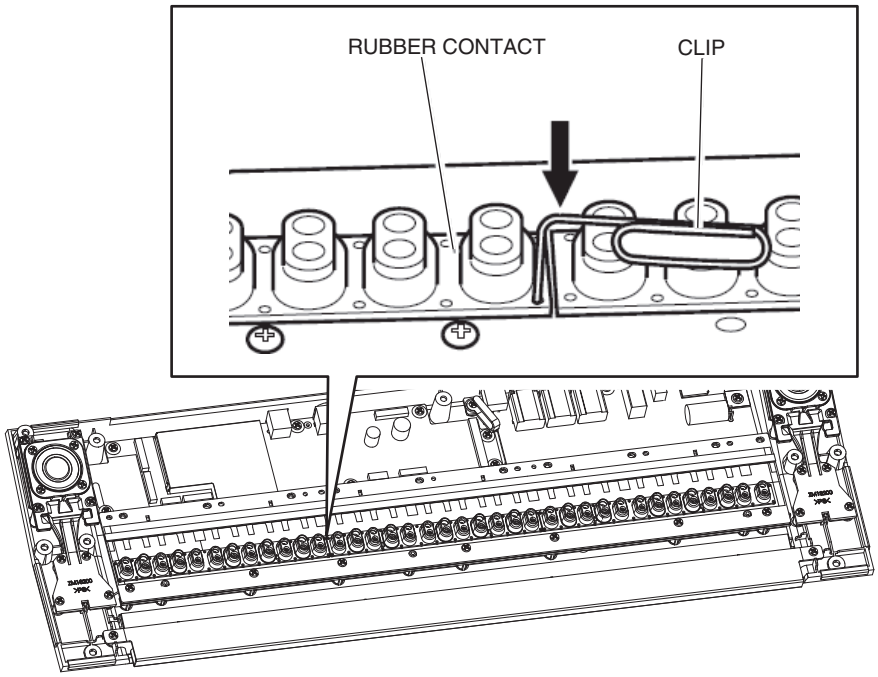


Fig.5

- MK circuit board
  1. Remove all black and white key sets. (See "White keys and black keys" and Fig.3.)
  2. Remove 7 screws [60], and remove the MK circuit board. (Fig.6)

* ***When the MK circuit board is replaced, the felt U and the limit stopper should also be replaced. (Make sure you have all spare parts on hand when you do.)***

* ***When mounting the MK circuit board, tighten screws number 1 - 7 in the order indicated in Fig.7. (Fig.7)***

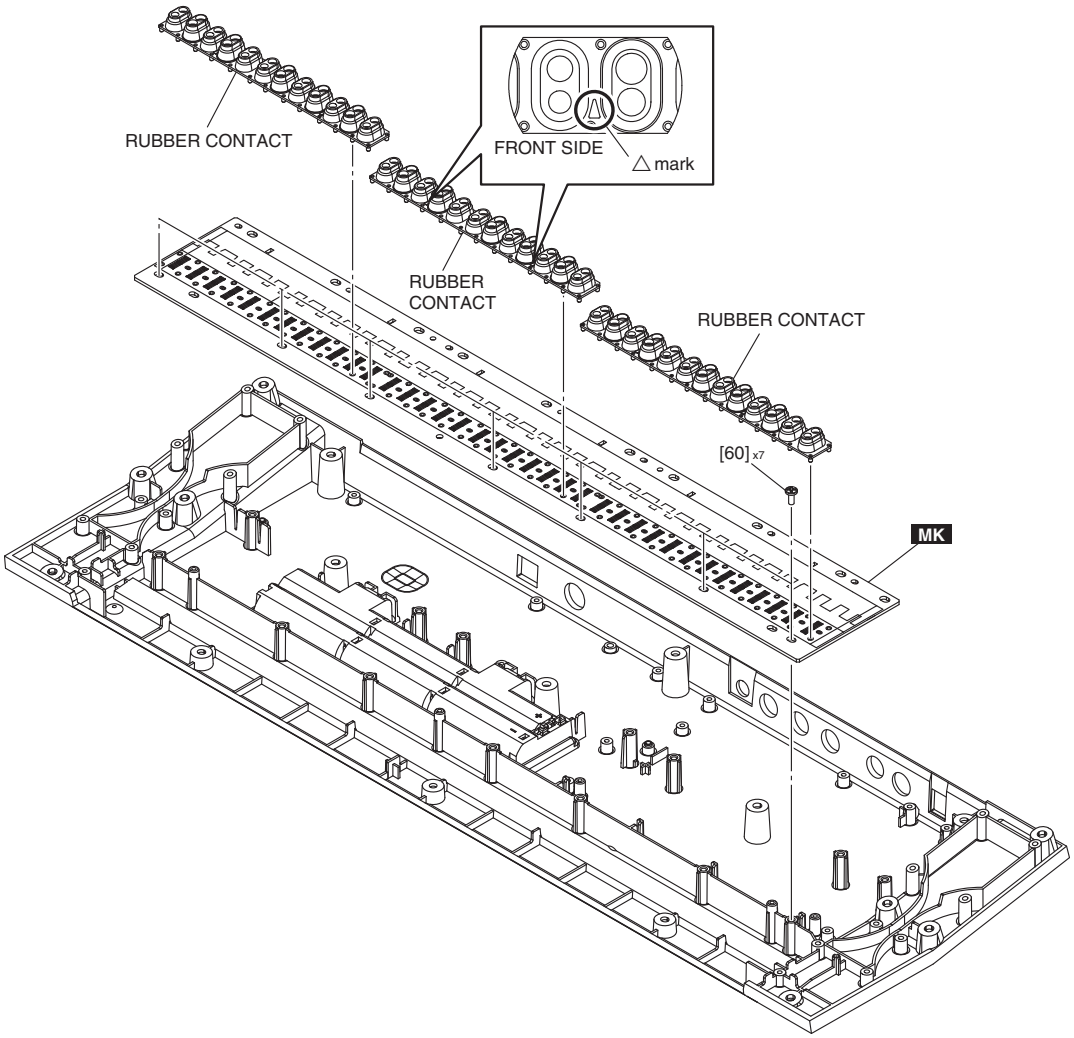


Fig.6

●**Top view**

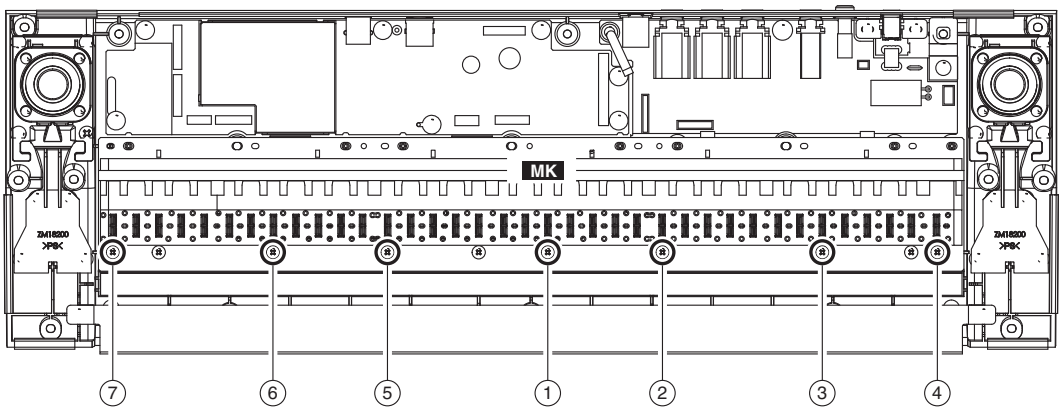


Fig.7

3. Speaker (time required: About 5 minutes)

1. Remove the upper case assembly. (See "procedure 1")
2. Remove the 4 screws [240]. (Fig.8)
3. Remove the SP ribbon cable soldered to the terminals and the speakers. (Fig.8)

* ***Remove the right and left speakers in the same way.***

* ***The only spare parts that can be obtained for the speaker consist of the speaker assembly (the right and left speakers and the SP ribbon cable). When replacing the speaker, remove the speaker from the speaker assembly in the same way.***

* ***Be sure to install the speakers correctly when connecting them using the SP ribbon cable. (Photo.1)***

4. Speaker baffle assembly (Time required: About 6 minutes)

1. Remove the upper case assembly. (See "procedure 1")
2. Remove the speakers. (See "procedure 3")
3. Remove eight screws [240], and the speaker baffle assembly. (Fig.8)

* ***Remove the right and left speaker baffle in the same way.***

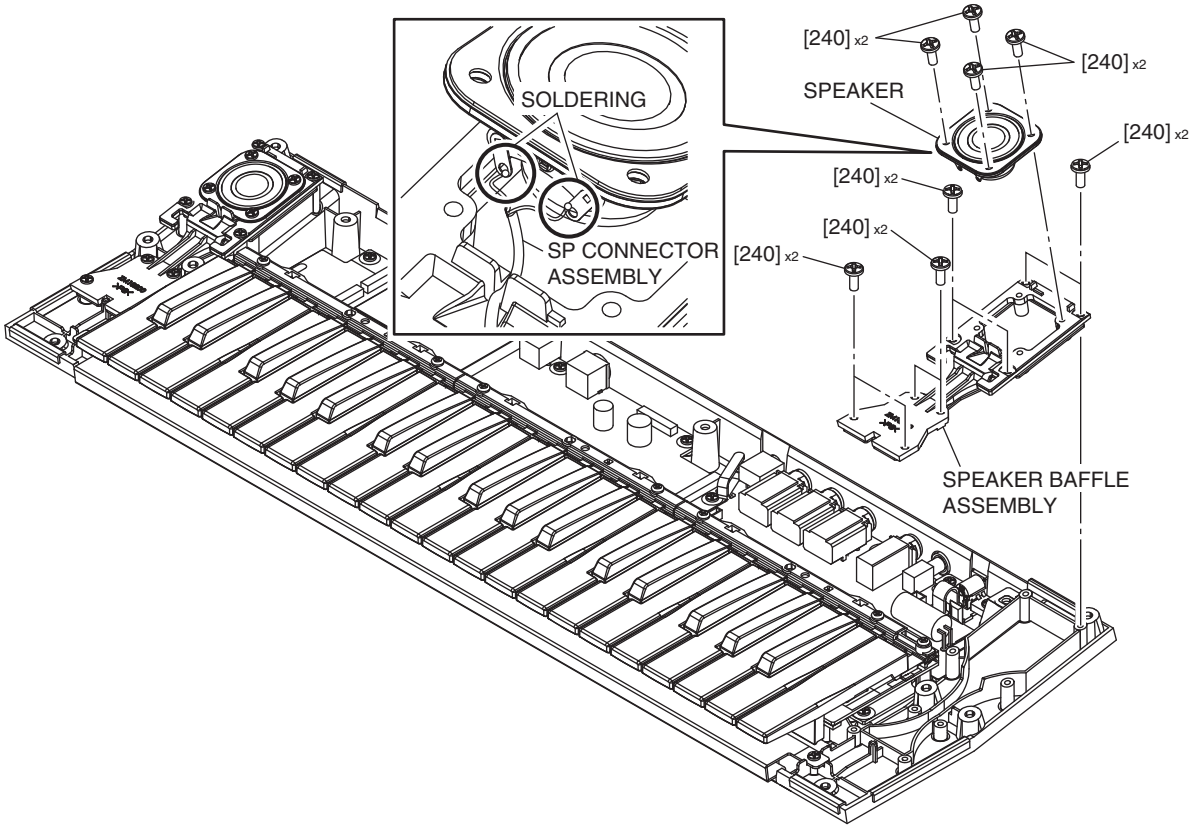


Fig.8

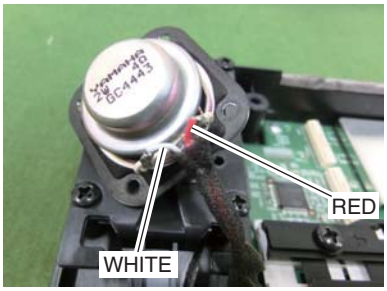


Photo.1

5. DME circuit board (Time required: About 15 minutes)

1. Remove the upper case assembly. (See "procedure 1")
2. Remove the keyboard assembly. (See "procedure 2")
3. Remove 7 screws [250], and remove the DME circuit board. (Fig.9)

* ***When mounting the DME circuit board, first tighten screws number 1 and 2 in the order indicated in Fig.10. (Fig.10)***

* ***After replacing the DME circuit board, execute the "Factory Set" Test program.***

* ***After replacing the DME circuit board, upgrade the firmware to latest version, which is available on Yamaha web site.***

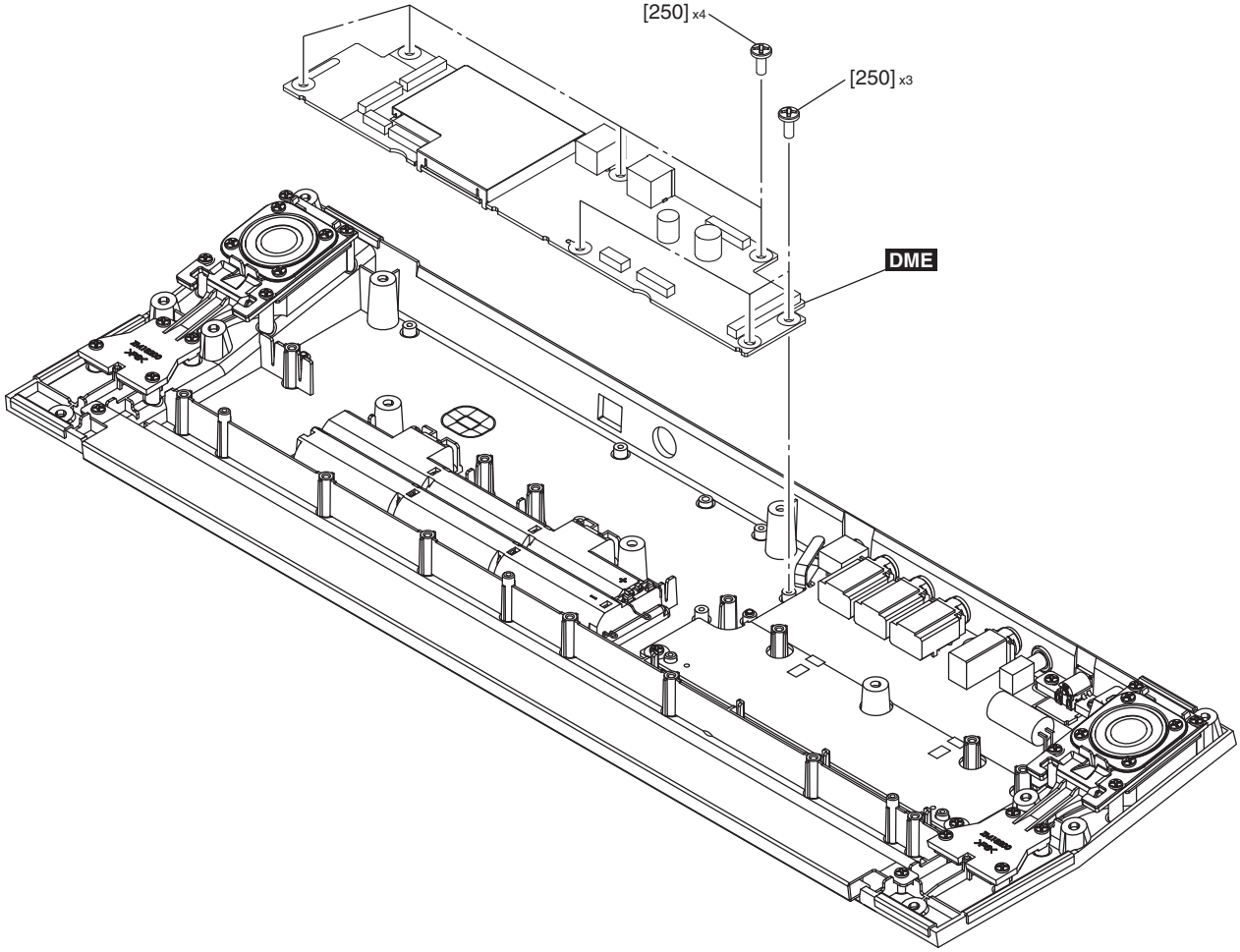


Fig.9

●Top view

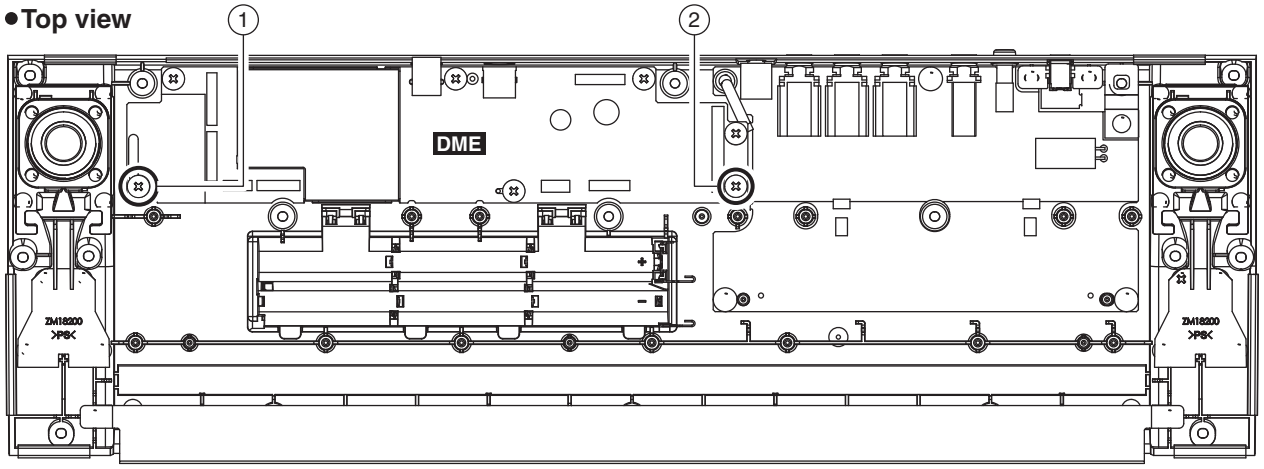


Fig.10

6. JKE circuit board (Time required: About 15 minutes)

1. Remove the upper case assembly. (See "procedure 1")
2. Remove the keyboard assembly. (See "procedure 2")
3. Remove the 7 screws [250], and remove the JKE circuit board. (Fig.11)

* ***When replacing the JKE circuit board, remove the conductive adhesive tape and the push knob of the Standby/On switch, and then attach them to the spare parts.***

* ***When mounting the JKE circuit board, first tighten screws number 1 and 2 in the order indicated in Fig.12. (Fig.12)***

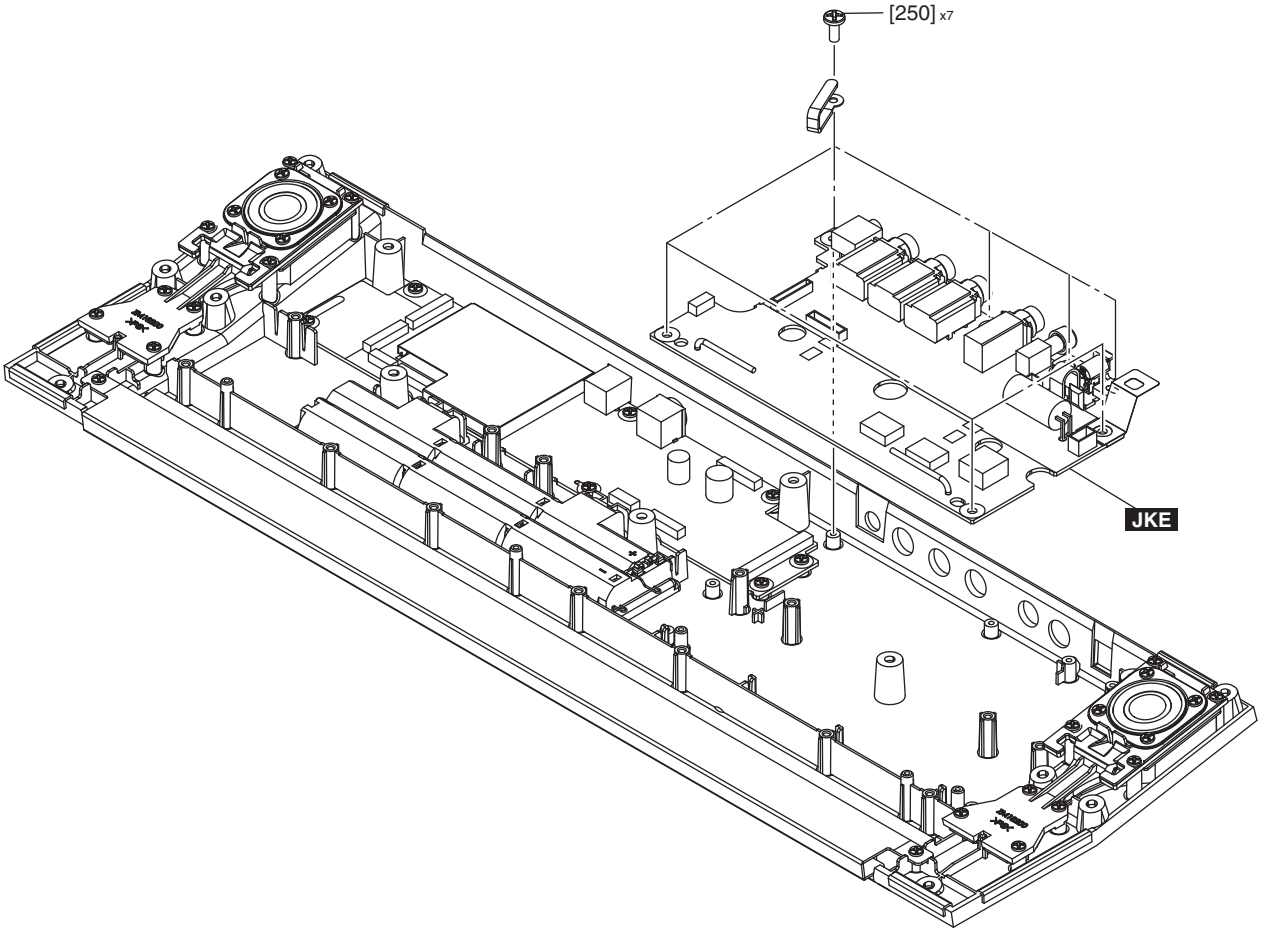


Fig.11

●Top view

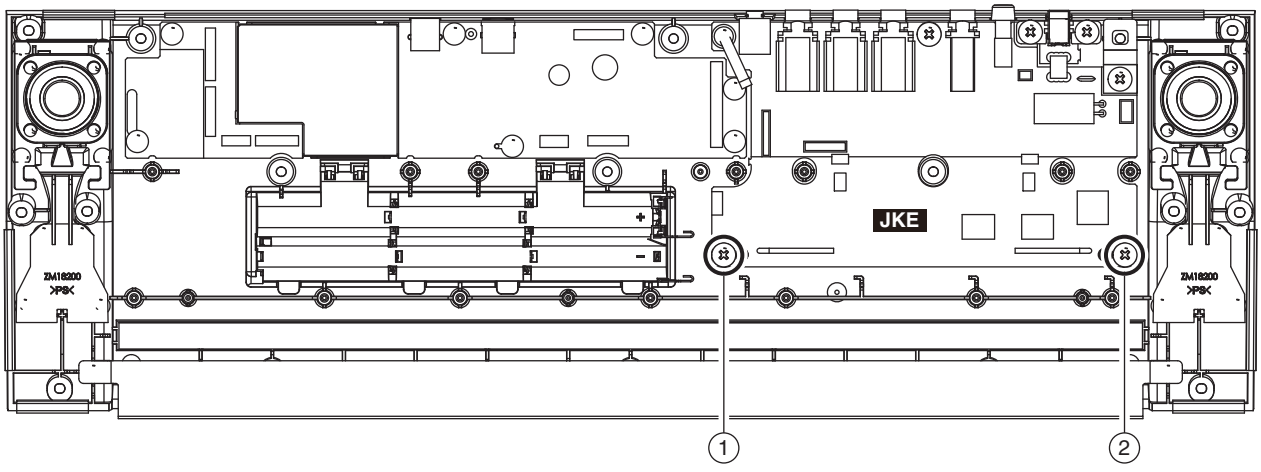


Fig.12

7. PNR circuit board (Time required: About 7 minutes)

1. Remove the upper case assembly. (See "procedure 1")
2. Remove two small slider knobs, one encoder knob and eight volume knobs from the front panel side. (Fig.13)
3. Remove three toggle switch nuts. (Fig.13)
4. Remove 4 screws [360] to remove the reinforced bracket. (Fig.14)
5. Remove 18 screws [360], and remove the PNE circuit board. (Fig.14)

* ***When mounting the PNE circuit board, tighten screws number 1 and 2 in the order indicated in Fig.15. (Fig.15)***

* ***When mounting the reinforced brackets, first tighten screws number 1 and 2 the reinforced bracket in the order indicated in Fig.15. (Fig.15)***

* ***When mounting the reinforced bracket, make sure that the ribbon cable does not come on top of the reinforced bracket.***

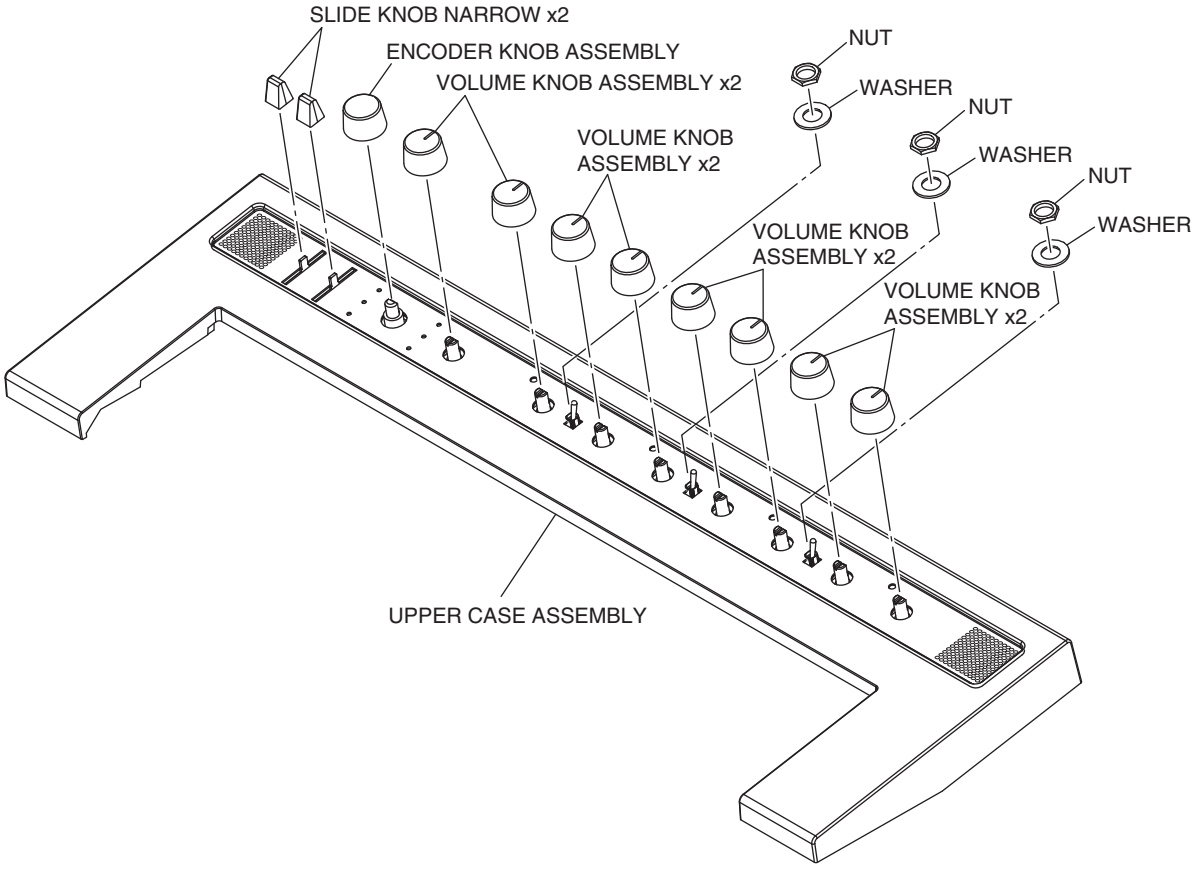


Fig.13

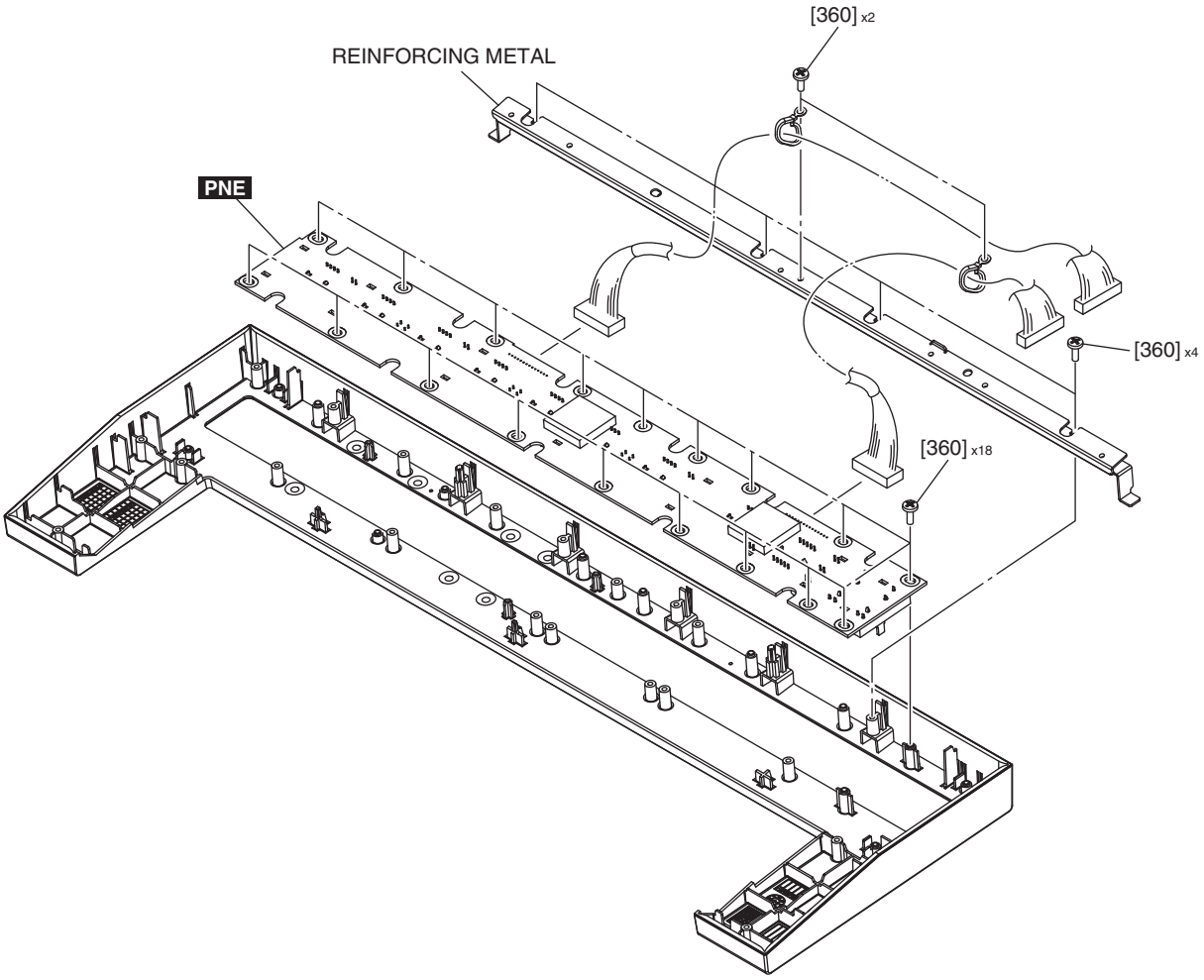


Fig.14

● **Top view**

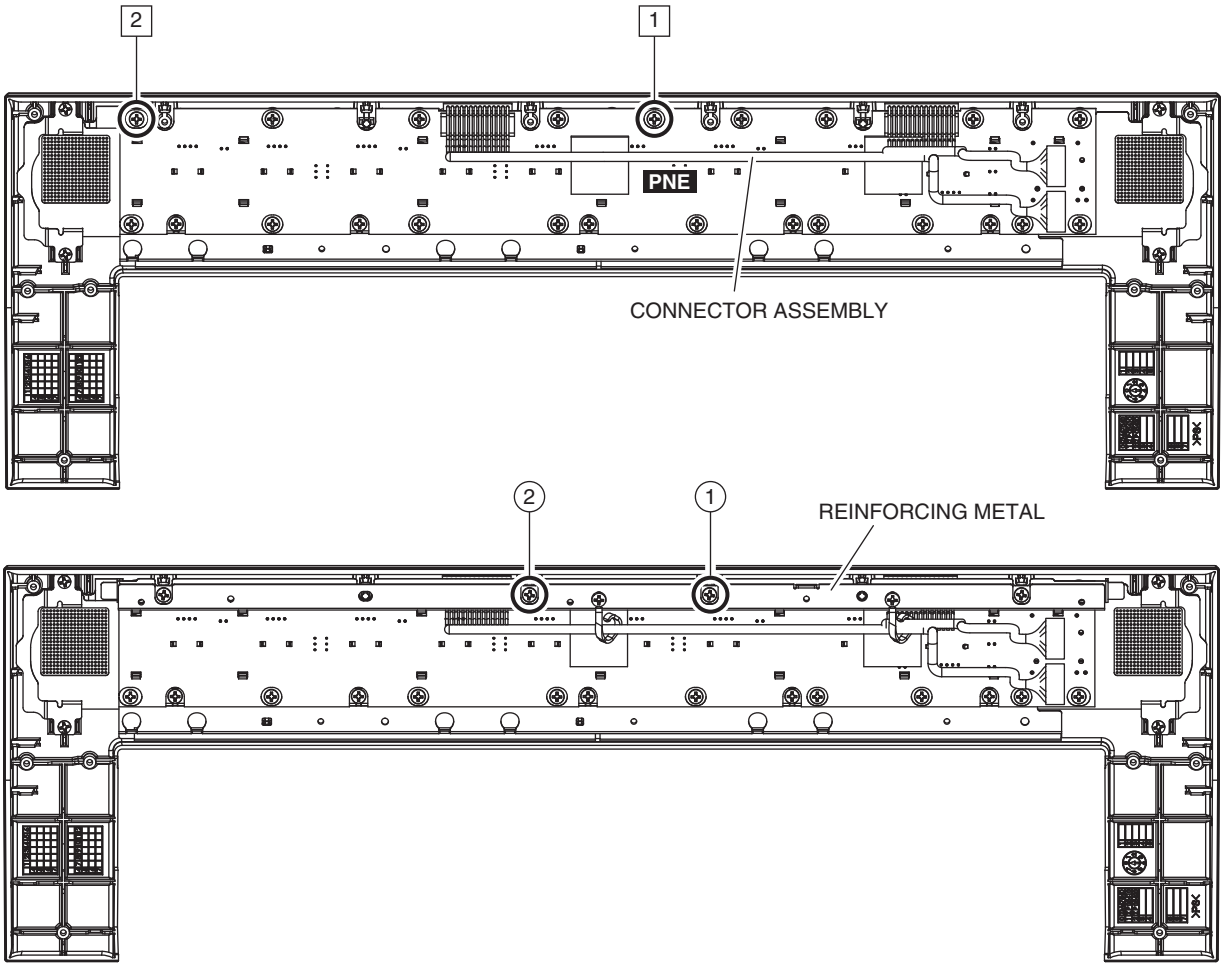


Fig.15

8. Printed upper case and printed aluminum panel (time required: about 10 minutes)

1. Remove the upper case assembly. (See "procedure 1")
2. Remove the PNE circuit board. (See "procedure 7")
3. Remove 5 screws [360] to remove the reinforced plate. (Fig.16)
4. Remove 4 screws [370] to remove the right and left support plate. (Fig.16)

* ***The printed upper case and printed aluminum panel cannot be removed.***

* ***During repairs or replacements, be sure to have both spare parts on hand and use adhesive (THREEBOND TB1549D) to attach them.***

* ***When mounting the reinforcing metal 2, tighten screws number 1 and 2 in the order indicated in Fig.17. (Fig.17)***

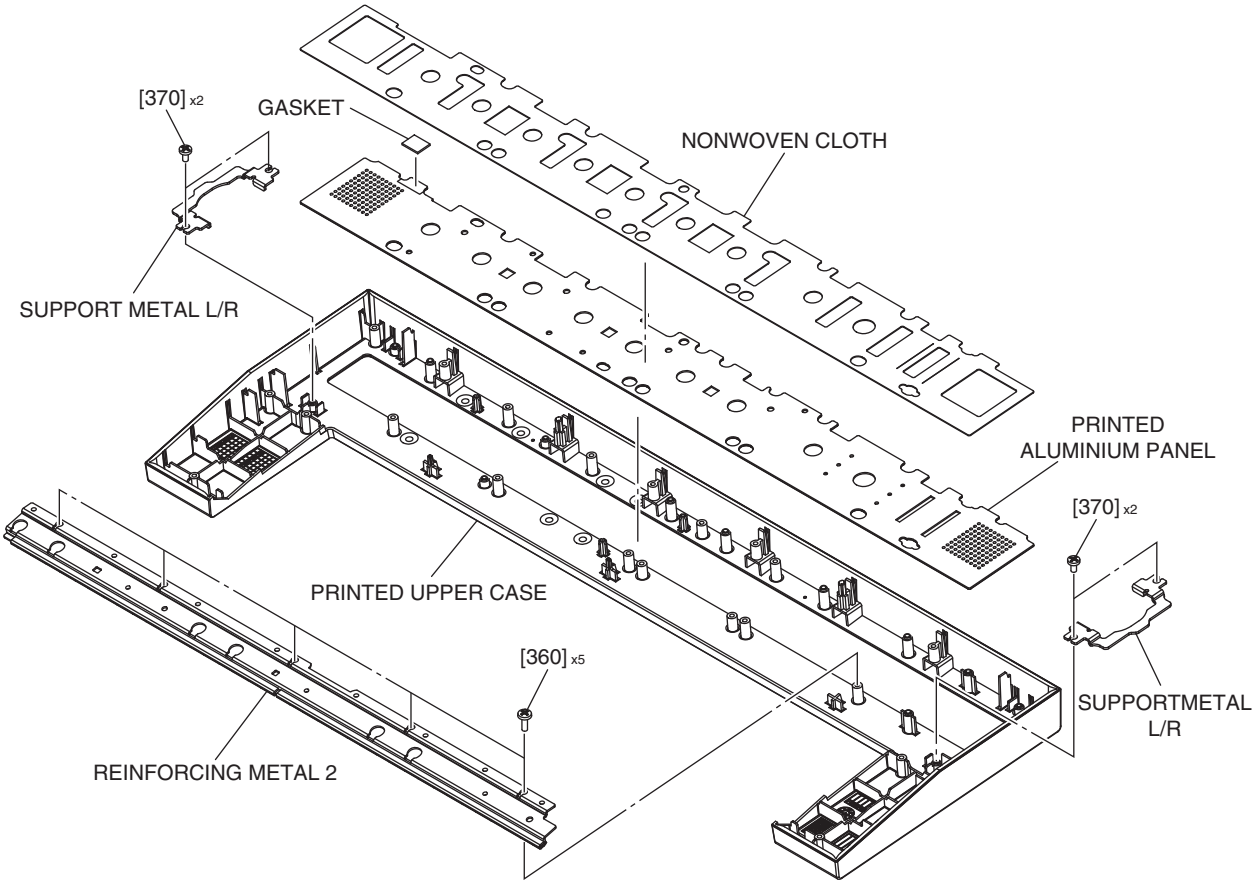


Fig.16

● Top view

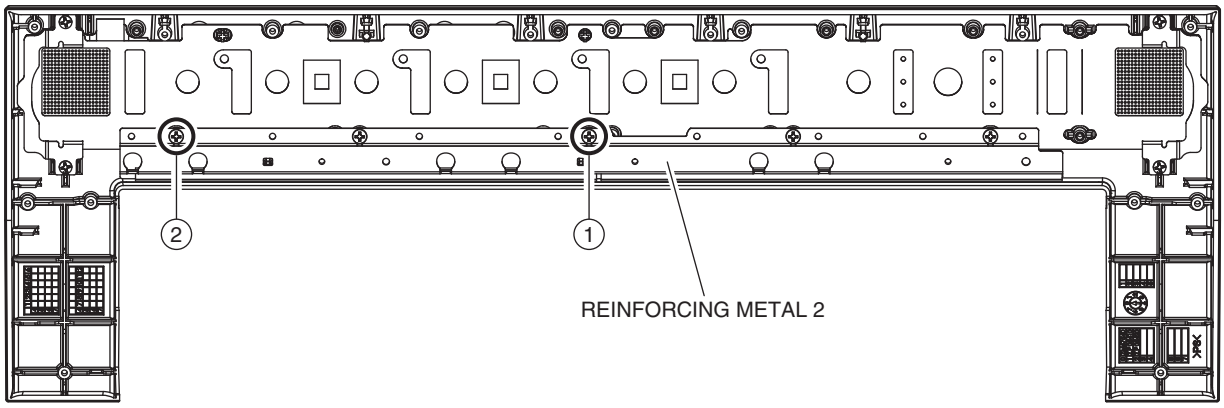


Fig.17

9. Painted front rail (Time required: About 5 minutes)

1. Remove the 3 screws [130]. (Fig.18)
2. Remove the upper case assembly. (See "procedure 1")
3. Remove 2 screws [250] to remove the painted front rail. (Fig.19)

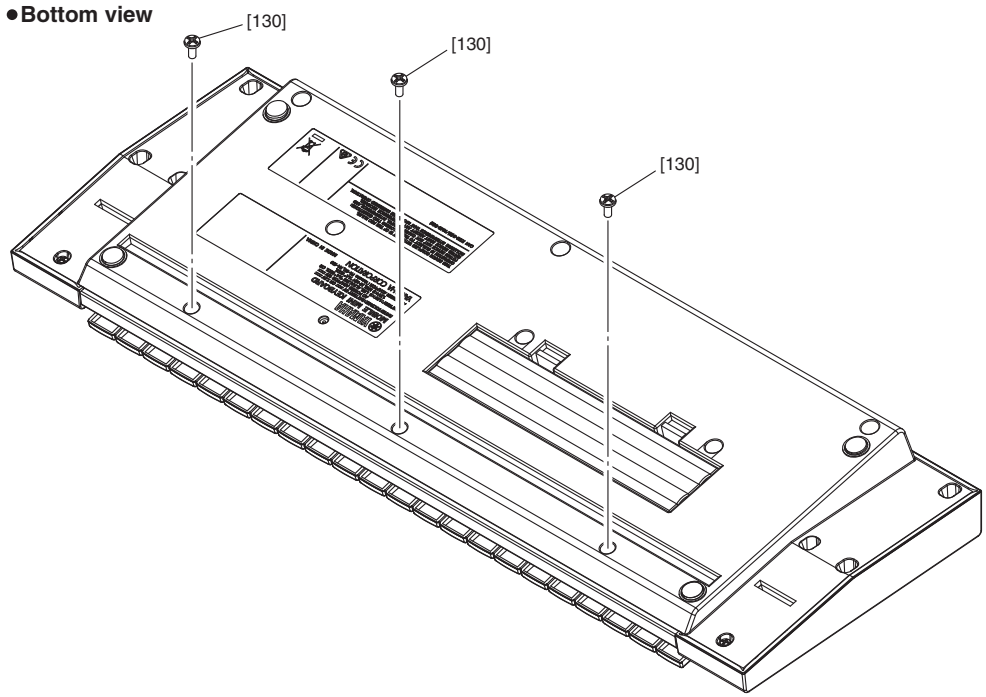


Fig.18

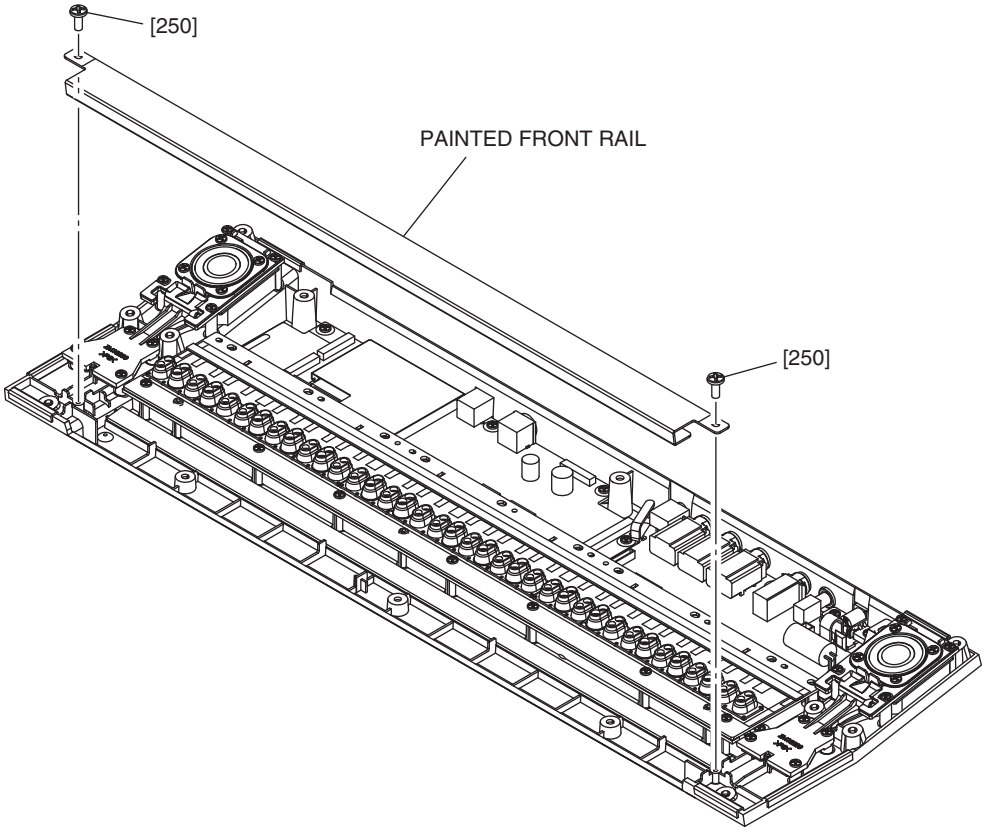


Fig.19

10. Removing the Spring Terminals

- Spring Terminal A and Spring Terminal B (Time required: About 15 minutes)
  1. Remove the upper case assembly. (See "procedure 1")
  2. Remove the keyboard assembly. (See "procedure 2")
  3. Remove the JK-BATT ribbon cable soldered to spring terminals A and B. （Fig.20）
  4. To remove spring terminal B, release the hook, and pull it out from the inside. （Fig.20）
  5. Flip over the lower case assembly, and remove the battery cover assembly. (Fig.1)
  6. To remove spring terminal B, release the hook, and pull it out from the inside. （Fig.20）
- Spring terminal C and spring terminal D (Time required: About 1 minutes)
  1. Remove the battery cover assembly.
  2. Release the hooks, and pull out spring terminals C and D. （Fig.20）

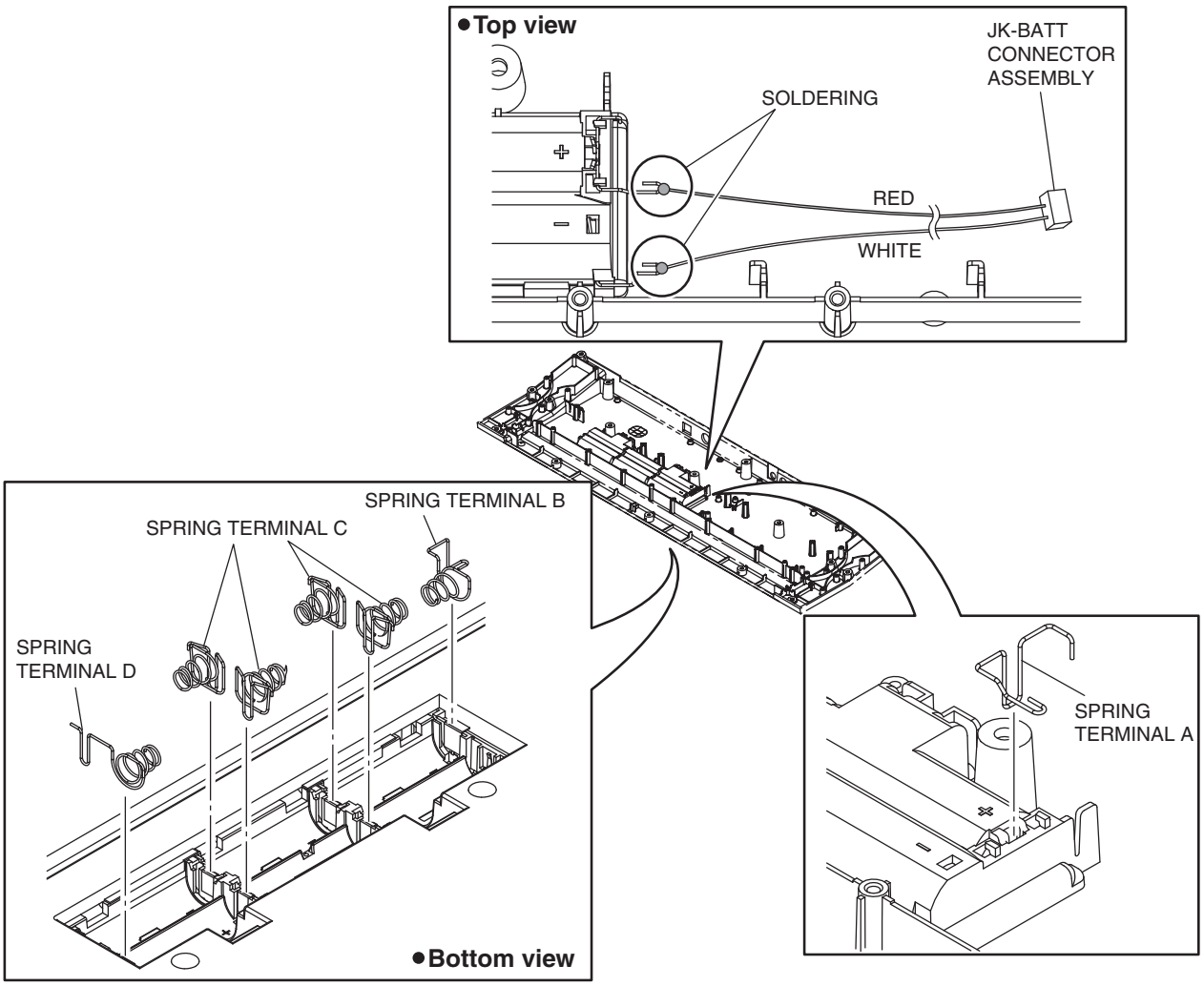


Fig.20

■ CIRCUIT BOARDS

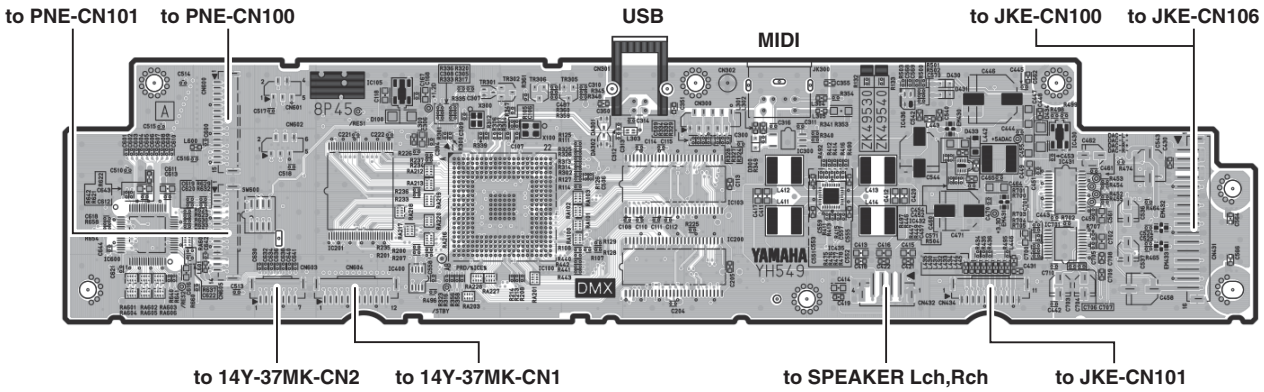
CONTENTS

DME Circuit Board (YH549A0)..... 29
JKE Circuit Board (YG211D0)..... 30
PNE Circuit Board (YG208C0)..... 31
14Y-37MK Circuit Board (YG387D0)..... 32

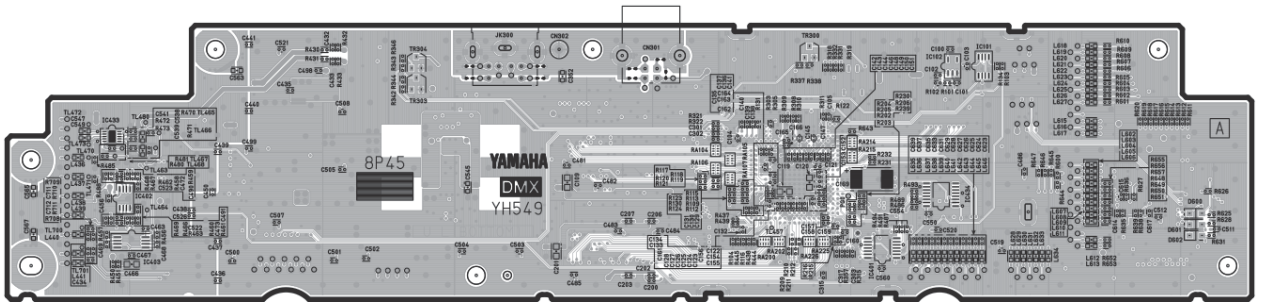
Note:

- For details on the circuit board parts, see the Parts List.

● DME Circuit Board (YH549A0)



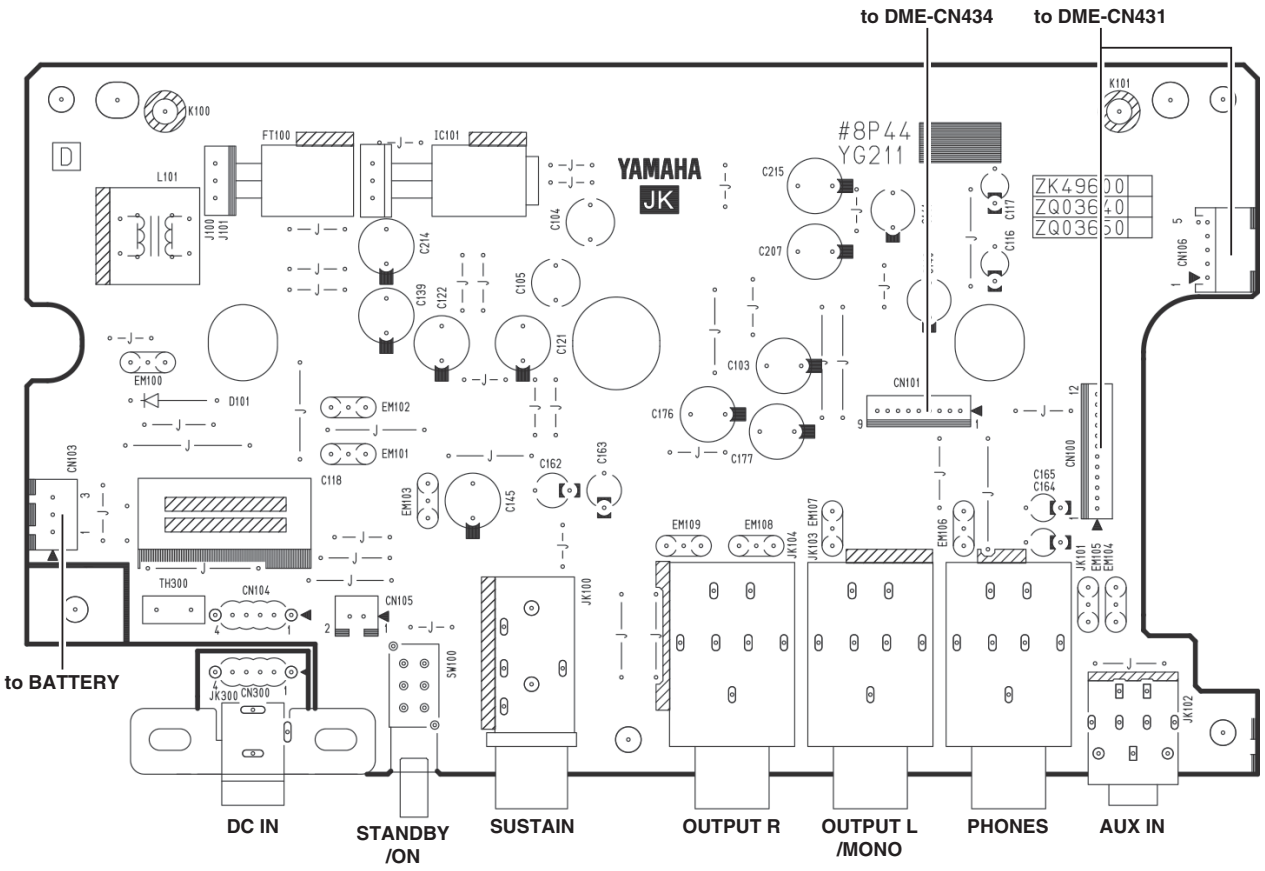
Component Side



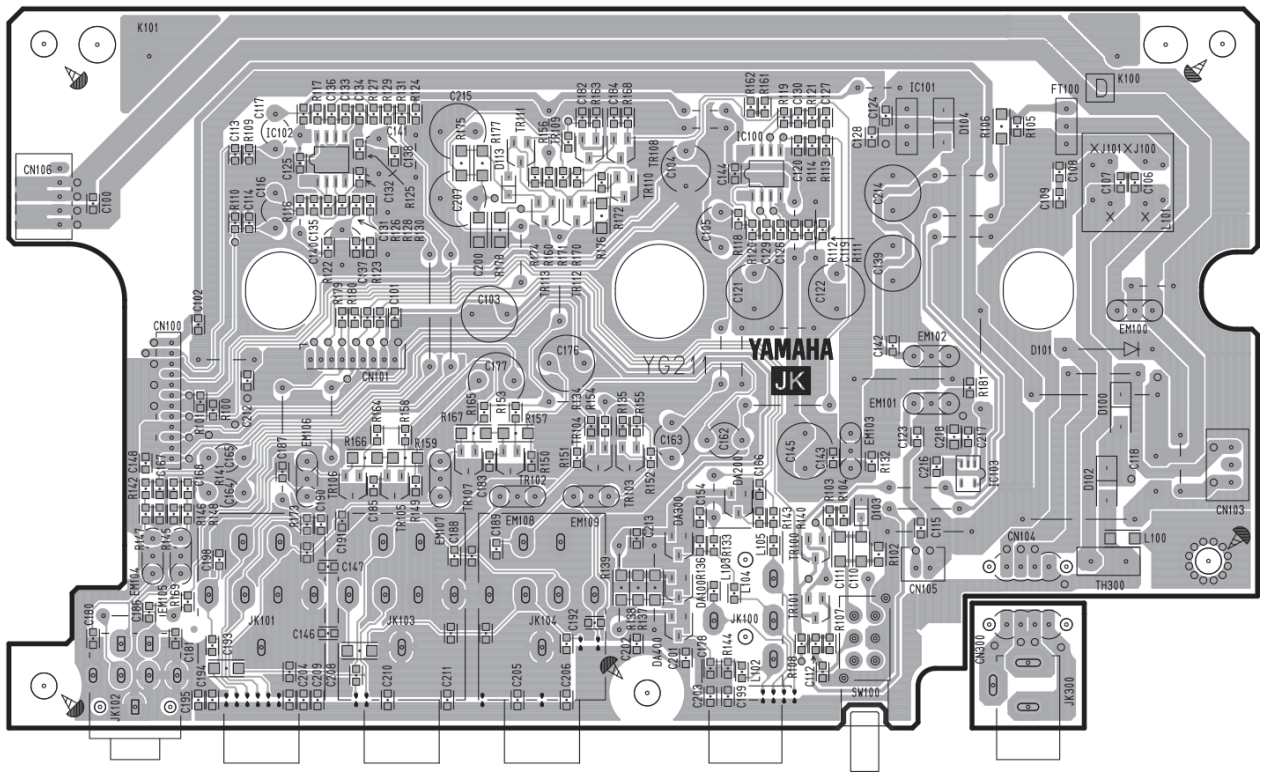
Pattern Side

2NA-ZK49530 △2

● JKE Circuit Board (YG211D0)



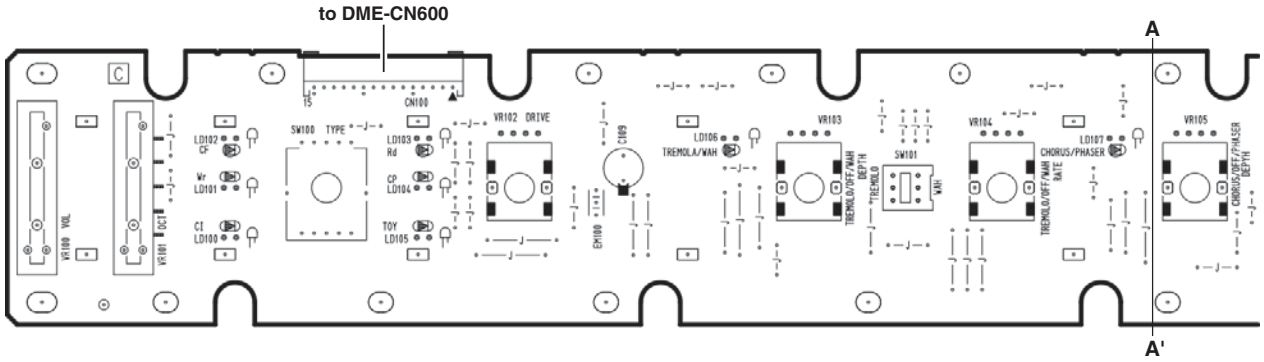
Component Side

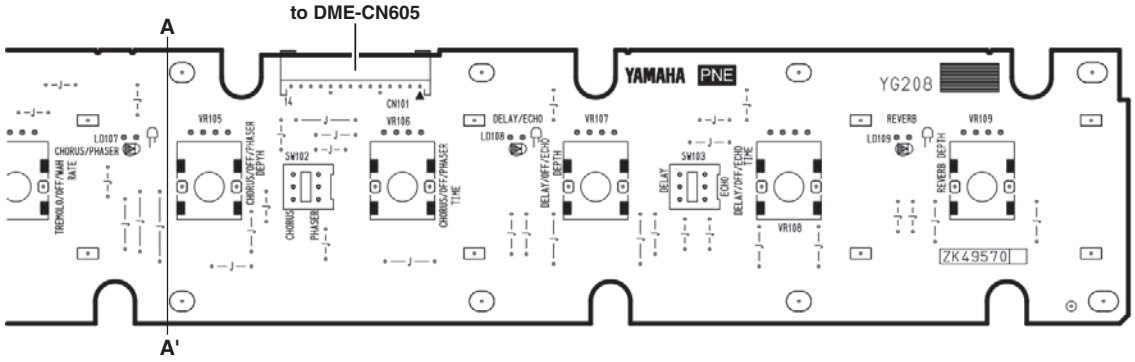


Pattern Side

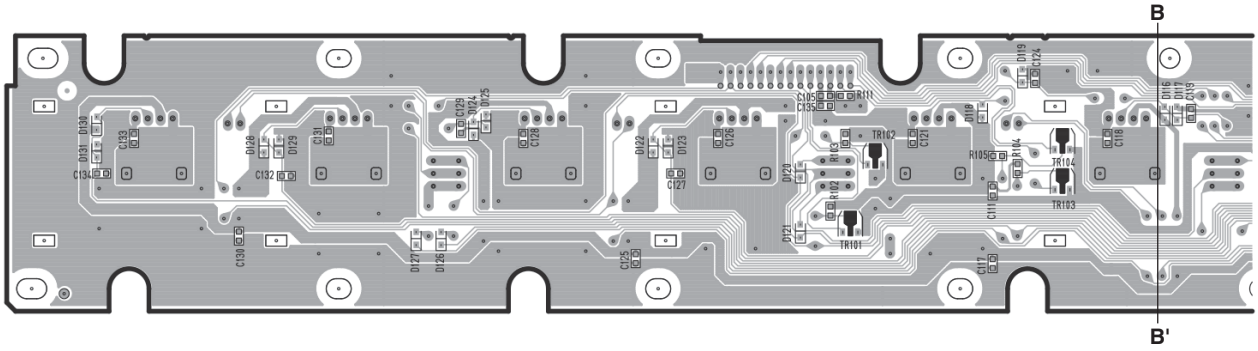
2NA-ZK49600 3

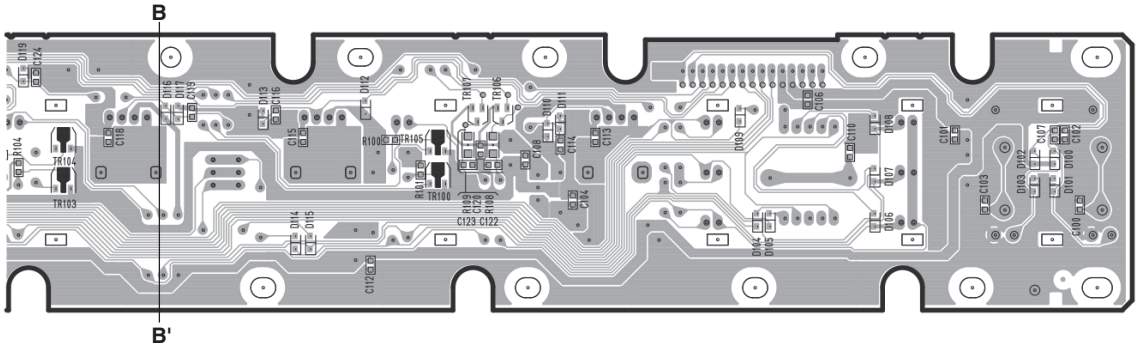
● PNE Circuit Board (YG208C0)





Component Side

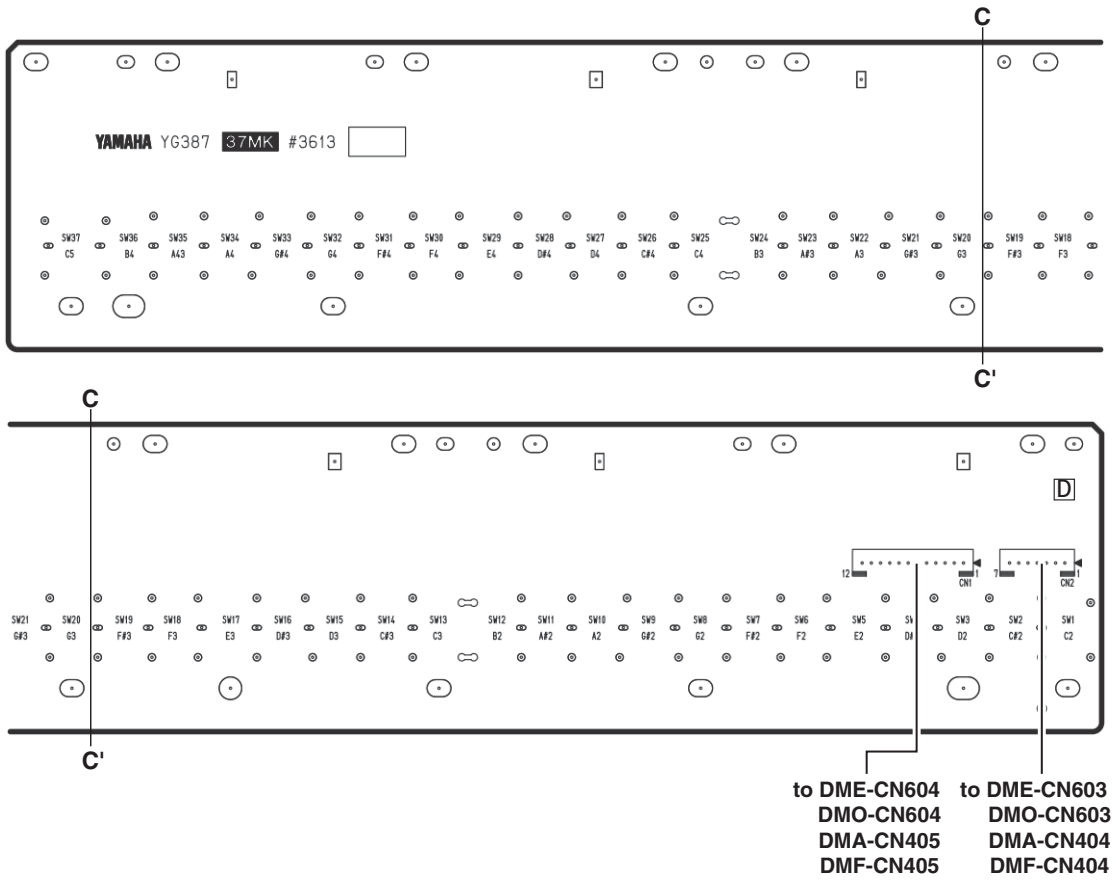




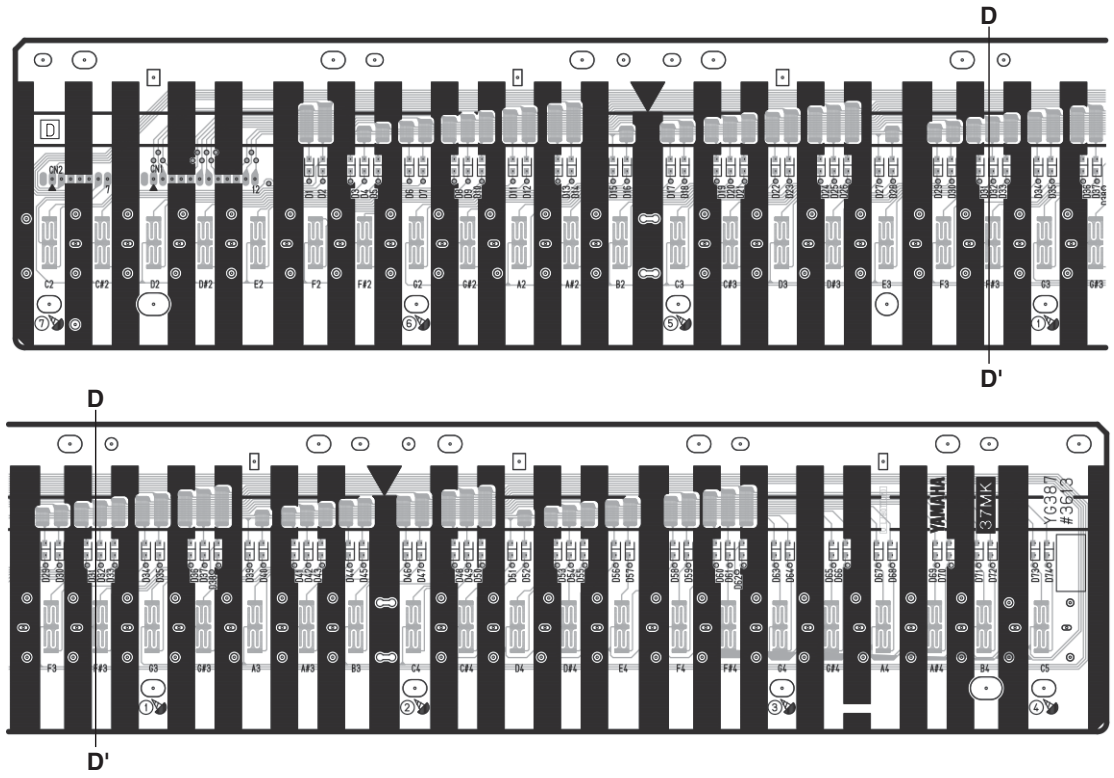
Pattern Side

2NA-ZK49570

● 14Y-37MK Circuit Board (YG387D0)



Component Side



Pattern Side

2NAK8-ZK23520

TEST PROGRAM

Caution:

- Executing Factory Set test number 29 will delete all setting data.

1. Measurement conditions

1-1. Environment

Perform testing under following conditions.

- Ordinary temperature (5 - 40 degrees Celsius)
- Normal humidity (Relative humidity: 30 to 90%)

If the test results deviate from the test standard range, re-test under ordinary temperature (5 - 40 degrees Celsius) and ordinary humidity (30 - 90 % relative humidity) conditions.

1-2. Power supply

Use the AC adapters listed below to connect to instrument to the AC mains.

- PA-130B: 90 - 253 V (50 Hz or 60 Hz)
- PA-130(U): 108 V - 132 V (60 Hz)

The voltage variations of the adapters should be within ±10% of the rated voltage and their capacity should be 500 VA or more.

When DC voltage is used instead of battery power, use a 9 V source with a current of 2 A or more and an internal resistance of 200 mΩ.

1-3. Measuring instruments

Make sure that the instruments used for inspections have enough accuracy and precision.

Use the instruments with more than 1M-ohms input impedance.

- Level meter (using low pass filter fc=15 kHz) (for output level measurements)
- Frequency counter (should be capable of measuring to three places of decimals) (for pitch measurements)
- Oscilloscope (for measuring popping noise)

1-4. Test jigs

- Foot switch (FC3, FC4, FC5) (for inspecting the [SUSTAIN] jack)
- Oscillator (for input of sine waves to the [AUX IN] jack)
- Stereo mini-plug cable (for checking the [AUX IN] jack)
- Headphones (for checking the [PHONES] jack)
- MIDI breakout cable and MIDI cable (for checking the [MIDI] jack)
- USB cable (A-B type) (for checking the [USB] jack)

1-5. Jack connection state

- [OUTPUT L/MONO], [OUTPUT R] jack: Connect a measuring instrument to this jack (10 kΩ load).
- [PHONES] jack: Connect a measuring instrument to this jack (L and R channels: 33 Ω load).
- [SUSTAIN] jack: Before turning on the power of the reface CP, plug in the foot switch.

1-6. reface CP settings

- [VOL] slider: MAX
- [OCT] slider: OCT
- [TYPE] knob: RdI
- [DRIVE] knob: MIN

TREMOLO/WAH

- [DEPTH] knob: MIN
- [TREMOLO/WAH] switch: MIDDLE
- [RATE] knob: MIN

CHORUS/PHASER

- [DEPTH] knob: MIN
- [CHORUS/PHASER] switch: MIDDLE
- [SPEED] knob: MIN

D.DELAY/A.DELAY

- [DEPTH] knob: MIN
- [D.DELAY/A.DELAY] switch: MIDDLE
- [TIME] knob: MIN

REVERB

- [DEPTH] knob: MIN

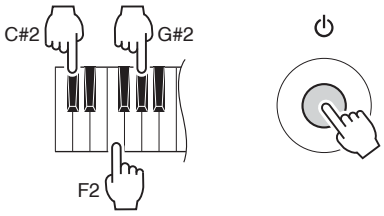
Other keys

- Pedal: Off
- Other settings: Reset to default values at power on.

2. Test Mode

2-1. Starting Test mode

1. While holding down the [C#2], [F2] and [G#2] keys simultaneously, press the [⏻] (Standby/On) switch to turn the power ON(▬).



2. When the Test Program starts up normally, an A3 sine wave is output for one second.

2-2. Selection and execution of test items

Press the corresponding key to select and execute each Test item.

2-3. Ending a test item

- When the result of a test is OK, press the [C#2] key to exit the test.
  If the test fails, you cannot exit the test by pressing the [C#2] key.
- If the test fails, press the [C2] white key, the lowest key to exit the test.
  You can also use [C2] to force quit during a test.

2-4. Test Item List

No.	Test item	"Selection and execution of test items" procedures
1	**ROM Version**	Confirms the ROM version. Press keys in the specified range and find the keys sounding C4 sine wave. The number of these keys indicates the ROM version. 1) Press the [D2] key to start the test. 2) Press keys [C2] - [A2] one after the other to check the integer of the ROM version. When the "pressed key number" corresponds to the integer of the current version, the result is OK. If not, it is NG. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second. The 0 to 9 numbers are assigned to the keys [C] to [A] as follows. [C]=0 [C#]=1 [D]=2 [D#]=3 [E]=4 [F]=5 [F#]=6 [G]=7 [G#]=8 [A]=9 3) Press keys [C3] - [A3] one after the other to check the first decimal place of the ROM version. 4) In the same way, press keys [C4] - [A4] one after the other to check the second decimal place of the ROM version. * Press the [C5] key to exit the test item. * Set the [OCT] (octave) slider to [++] (max.) to exit the test item. Example: When the ROM version is 1.00. ▪ Integer part: when the [C#2] key of the [C2] - [A2] keys is pressed, a C4 sine wave is heard. ▪ First decimal place: when the [C3] key of the [C3] - [A3] keys is pressed, a C4 sine wave is heard. ▪ Second decimal place: when the [C4] key of the [C4] - [A4] keys is pressed, a C4 sine wave is heard. These three C4 sine wave is output make it possible to check that the version is "1.00." (Pressing keys other than those above will output a C2 sine wave.)
2	**All Memory Simple Check**	Performs a simple check of all the ROM and RAM chips connected to the CPU bus. 1) Press the [D#2] key to start the test. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second.
3	**ROM (Program + Wave) Simple Check**	Performs a simple check of the Program/Wave ROM connected to the CPU bus. 1) Press the [E2] key to start the test. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second.

No.	Test item	"Selection and execution of test items" procedures
4	**RAM Simple Check**	Executes the simplified check of the RAM connected to the CPU bus. 1) Press the [F2] key to start the test. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second.
5	**EffectRAM Simple Check**	Executes the simplified check of the Effect RAM connected to the CPU bus. 1) Press the [F#2] key to start the test. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second.
6	**Pitch Check**	Checks whether or not the correct pitch is output from this instrument. 1) Connect the Frequency counter to the R or L channel of the [PHONES] jack. 2) Press the [G2] key so that the sine wave of A3 sounds. 3) Check whether or not 441.0 Hz +/- 0.2 Hz is indicated on the Frequency counter. "441.0 Hz +/- 0.2 Hz" indication means no problem. 4) Press the [C2] key to stop the sound and end this test.
7	**Output Level R Check**	Measures whether the R channel output level of the [PHONES/OUTPUT] jack is output properly. 1) Connect a level meter (using an fc = 15 kHz low pass filter) to the [PHONES] or [OUTPUT L/MONO]/[OUTPUT R] jack on the rear panel. 2) Set the [VOL] slider to MAX. 3) Press the [G#2] key so that a 1 kHz sine wave is output. 4) Use the level meter to check the output level values for the L and R channels. If the value is within the range below, the specifications are satisfied. [PHONES] (33 Ω load) • R : -3.7 dBu±2 dB • L: -50.0 dBu or less [OUTPUT] (10 kΩ load) • R : +0.2 dBu±2 dB • L: -60.0 dBu or less 5) Press the [C2] key to stop the sound and end this test.
8	**Output Level L Check**	Measures whether the L channel output level of the [PHONES/OUTPUT] jack is output properly. 1) Connect a level meter (using an fc = 15 kHz low pass filter) to the [PHONES] or [OUTPUT L/MONO]/[OUTPUT R] jack on the rear panel. 2) Set the [VOL] slider to MAX. 3) Press the [A2] key so that a 1 kHz sine wave is output. 4) Use the level meter to check the output level values for the L and R channels. If the value is within the range below, the specifications are satisfied. [PHONES] (33 Ω load) • L : -3.7 dBu±2 dB • R: -50.0 dBu or less [OUTPUT] (10 kΩ load) • L : +0.2 dBu±2 dB • R: -60.0 dBu or less 5) Press the [C2] key to stop the sound and end this test.

No.	Test item	"Selection and execution of test items" procedures
9	**SP MUTE Check**	Checks whether the Speaker MUTE works properly or not. 1) Press the [A#2] key to simultaneously output a 1 kHz sine wave from the R and L channels. Sound is coming from the speakers, even if the headphones are connected. 2) Set the [OCT] slider to [++] (Max) to make sure the sound is muted. 3) Set the [OCT] slider to [--] (Min) to make sure the sound is heard. 4) Press the [C2] key to stop the sound and end this test.
10	**MUTE Check**	Checks whether the MUTE works properly or not. 1) Press the [B2] key to simultaneously output a 1 kHz sine wave from the R and L channels. 2) Connect the headphones to the [PHONES] jack, and confirm the sound. 3) Set the [OCT] slider to [++] (Max) to make sure the sound is muted. 4) Set the [OCT] slider to [--] (Min) to make sure the sound is heard. 5) Press the [C2] key to stop the sound and end this test.
11	**Line Out Mute Check**	Checks whether or not the [OUTPUT] MUTE works properly. 1) Connect a level meter to the [OUTPUT L/MONO]/[OUTPUT R] jack on the rear panel. 2) Press the [C3] key to simultaneously output a 1 kHz sine wave from the R and L channels. 3) Set the [OCT] slider to [++] (Max) to make sure the sound is muted. Sound can still be heard from the speakers even if the [OUTPUT] L and R channels are muted. 4) Set the [OCT] slider to [--] (Min) to make sure the sound is heard. 5) Press the [C2] key to stop the sound and end this test.
12	**JACK Insertion and Extraction Check**	Make a connection/disconnection check of the [PHONES] and [AUX IN] jacks. 1) Press the [C#3] key to start the test. 2) Connect the headphones to the [PHONES] jack, and confirm that a C3 sound is output. 3) Disconnect the headphones and confirm that the sounds stops. 4) In the same way, connect a stereo mini-plug cable to the [AUX IN] jack and confirm that a C3 sound is output. 5) Disconnect the stereo mini-plug cable and confirm that the sound stops. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second.

No.	Test item	"Selection and execution of test items" procedures
13	**AUX In Check**	Checks signal input to the [AUX IN] jack. 1) Use the stereo mini-plug cable to connect the oscillator to the [AUX IN] jack of the rear panel. 2) Connect a level meter (using an fc = 15 kHz low pass filter) to the [PHONES] or [OUTPUT L/MONO]/[OUTPUT R] jack on the rear panel. 3) Press the [D3] key to start the test. 4) Input a sine wave (1 kHz, -3.79 dBu) to the L and R channels of the [AUX IN] jack. 5) Use the level meter to check the output level values for the L and R channels. If the value is within the range below, the specifications are satisfied. [PHONES] (33 Ω load) • L : -3.3 dBu±2 dB • R : -3.3 dBu±2 dB [OUTPUT] (10 kΩ load) • L : +0.5 dBu±2 dB • R : +0.5 dBu±2 dB 6) Remove the stereo mini-plug cable from the [AUX IN] jack.
14	**SW LED Check**	Checks whether or not the panel switches (rotary switches and toggle switches) and their LED lamps (if available) work properly. 1) Press the [D#3] key to start the test. 2) Press each switch in the "Switch Test Item List" on page 42 in listed order. 3) When each switch is pressed, the note sound assigned to respective switch will be heard. Also, the LED assigned to respective switch will light if available. 4) Confirm that all the switches are pressed correctly, resulting in OK. OK : A C5 sine wave is output for 1 second. NG : No sound output. * Pressing a switch other than that specified results in NG. * If a switch is pressed, but switch operation is not recognized, there will be no sound output resulting in NG.
15	**All LED ON Check**	Checks whether all the LED lamps light properly or not. 1) Press the [E3] key to start the test. 2) Confirms that all the LED lamps light and that there are no unlit or abnormally bright LED lamps.
16	**Abnormal detecting Circuit Check**	Checks operation of the Fail-Safe Circuit. 1) Press the [G3] key to simultaneously output the A3 sine wave from the R and L channels. 2) Set the [OCT] slider to [++] (Max) to make sure the sound is muted. 3) Set the [OCT] slider to [--] (Min) to make sure the sound is heard. 4) Press the [C2] key to stop the sound and end this test.
17	**Sustain Pedal Check**	Checks whether the sustain pedal (foot switch) plugged into the [SUSTAIN] jack is working properly. 1) Press the [G#3] key to start the test. 2) Step on the sustain pedal to check that a C3 sine wave is output. 3) Check that a G3 sine wave is output when you release the sustain pedal. 4) Disconnect the sustain pedal plug from the [SUSTAIN] jack. OK : A C4 sine wave is output for 1 second. * Connect the sustain pedal to the [SUSTAIN] jack on the rear panel before turning on the instrument.

No.	Test item	"Selection and execution of test items" procedures
18	**Slider Check**	Checks the [VOL] (Volume) slider and [OCT] (octave) slider on the panel. 1) Press the [A#3] key to start the test. 2) First, move the [VOL] slider from MIN to MAX. 3) A sine wave in the following pitches will be heard. MIN: A C3 sine wave is output. MAX: A C4 sine wave is output for 1 second. 4) Next, move the [OCT] slider from [--] to [++]. 5) A sine wave in the following pitches will be heard. [--] (MIN): A C3 sine wave is output. [-] (MIN): A D3 sine wave is output. [OCT]: An E3 sine wave is output. [+] (MIN): An F3 sine wave is output. [++] (MAX): A C4 sine wave is output for 1 second. 6) Confirm that both sliders work correctly , resulting in OK. OK : A C5 sine wave is output for 1 second. NG : No sound output. * Operating a slider other than the specified slider results in NG. * A slider whose default value is MIN will not output a sine wave. The slider will output a sine wave if repositioned to MIN. * Make sure that the sliders move smoothly and do not get stuck.
19	**Knob Check**	Checks operation of all panel knobs. 1) Press the [B3] key to start the test. 2) Press each knob in the "Knob Test Item List" on page 42 in listed order. Gradually turn the knobs counterclockwise and clockwise to MAX to check knob operation. 3) A note sound assigned to respective knob will be heard. MIN: A C3 sine wave is output. MAX: A C4 sine wave is output for 1 second. 4) Confirm that all the knobs are turned correctly, resulting in OK. OK : A C5 sine wave is output for 1 second. NG : No sound output. * Pressing a switch other than that specified results in NG. * A knob whose default value is MIN will not output a sine wave. The knob will output a sine wave if repositioned to MIN. * Make sure that all knobs move smoothly and do not get stuck.
20	**MIDI Check**	Checks whether or not the [MIDI] jack works properly. 1) Use the MIDI cable to make a loop connection between the MIDI IN and OUT pins of the [MIDI] jack. 2) Press the [C4] key to start the test. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second. 3) Disconnect the MIDI cable.

No.	Test item	"Selection and execution of test items" procedures
21	**USB Connection Check**	Checks whether [USB] jack works properly. 1) Install a USB-MIDI driver in a PC, then perform a MIDI through setup. 2) Connect the [USB] jack to a PC using a USB cable. 3) Press the [C#4] key to start the test. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second. 4) Disconnect the USB cable.
22	**Keyboard Check**	This checks whether each key is operating properly. 1) Press the [D4] key to start the test. 2) Press the keys starting from [C2] (the lowest key) . C3 to B3 sound is repeatedly output depending on what keys are pressed. 3) When the final [C5] is pressed, confirm the test result after C3 is heard. OK : A C4 sine wave is output for 1 second. NG : No sound output. * The [C2] and [C#2] keys cannot be used to end operation. You can end the test any time by setting the [OCT] slider to [++] (Max). However, if the [OCT] slider is at the [++] (Max) position from the start, it must be reset to [++]. * When a different key is pressed, when two or more keys are pressed at the same time, or when a key is not pressed at right speed, an error (NG) will occur.
23	**ROM Full Check**	Makes a full address check of the ROM connected to the CPU bus. It takes a few seconds until the test is completed. 1) Press the [D#4] key to start the test. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second.
24	**RAM Full Check**	Executes the check for all the addresses of the RAM connected to the CPU bus. It takes a few seconds until the test is completed. 1) Press the [E4] key to start the test. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second.
25	**Effect RAM Full Check**	Executes the check for all the addresses of the Effect RAM connected to the CPU bus. It takes 10 seconds for the test to complete. 1) Press the [F4] key to start the test. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second.
26	**Output Full Level R Check**	Measures the level of the R channel of the [PHONES/OUTPUT] jack at full output. 1) Connect a level meter (using an fc = 15 kHz low pass filter) to the [PHONES] or [OUTPUT L/MONO]/[OUTPUT R] jack on the rear panel. 2) Set the [VOL] slider to MAX. 3) Press the [F#4] key so that a 1 kHz sine wave is output. 4) Use the level meter to check the output level values for the L and R channels. If the value is within the range below, the specifications are satisfied. [PHONES] (33 Ω load) • R : +4.4 dBu±2 dB • L: -45.0 dBu or less [OUTPUT] (10 kΩ load) • R : +8.3 dBu±2 dB • L: -50.0 dBu or less 5) Press the [C2] key to stop the sound and end this test.

No.	Test item	"Selection and execution of test items" procedures
27	**Output Full Level L Check**	Measures the level of the L channel of the [PHONES/OUTPUT] jack at full output. 1) Connect a level meter (using an fc = 15 kHz low pass filter) to the [PHONES] or [OUTPUT L/MONO]/[OUTPUT R] jack on the rear panel. 2) Set the [VOL] slider to MAX. 3) Press the [G4] key so that a 1 kHz sine wave is output. 4) Use the level meter to check the output level values for the L and R channels. If the value is within the range below, the specifications are satisfied. [PHONES] (33 Ω load) • L : +4.4 dBu±2 dB • R: -45.0 dBu or less [OUTPUT] (10 kΩ load) • L : +8.3 dBu±2 dB • R: -50.0 dBu or less 5) Press the [C2] key to stop the sound and end this test.
28	**Voltage wire connection check**	Checks whether voltage can be detected when an AC adapter is connected. 1) Press the [G#4] key to start the test. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second.
29	**Factory Set**	This initializes all the backup data in the memory and restores the default settings. 1) Press the [A4] key to restore the default settings. OK : A C4 sine wave is output for 1 second. NG : A C2 sine wave is output for 1 second.
30	**POWER OFF Check**	Checks whether you can turn off the unit from the software. 1) Press the [A#4] key to start the test. If the LEDs all go on and then go out this indicates that the power has been turned off automatically. Since there is no restart, you have to manually turn it on to restart.
31	**Exit**	Lets you exit from the Test mode to Normal mode. Press the [B4] key to exit the test mode.
32	**Ping-pong Mode Check**	Checks whether the two contacts on the keyboard work. 1) Press the [C5] key to start the test. 2) Press any key slowly to make sure that the sound of the pressed key and the sound of the pressed key +4 are output for each contact. For example, when the [C2] key is pressed, C2 is output in make 1, while E2 is output in make 2 (in make 2, a chord consisting of C2 and E2 is heard). 3) When a key is released, for example, make sure that the sound of the pressed key +4 output stops when the key is released in make 2 and that output of the pressed key stops when the key is released in make 1.

2-5. Switch Test Item List

Order	Switch name	LED	Note No.
1	TYPE	Rdl	C3
2	TYPE	Rdll	C#3
3	TYPE	Wr	D3
4	TYPE	Clv	D#3
5	TYPE	Toy	E3
6	TYPE	CP	F3
7	TREMOLO/WAH TREMOLO	TREMOLO/WAH	F#3
8	TREMOLO/WAH OFF		G3
9	TREMOLO/WAH WAH		G#3
10	CHORUS/PHASER CHORUS	CHORUS/PHASER	A3
11	CHORUS/PHASER OFF		A#3
12	CHORUS/PHASER PHASER		B3
13	D.DELAY/A.DELAY D.DELAY	D.DELAY/A.DELAY	C4
14	D.DELAY/A.DELAY OFF		C#4
15	D.DELAY/A.DELAY A.DELAY	REVERB	D4

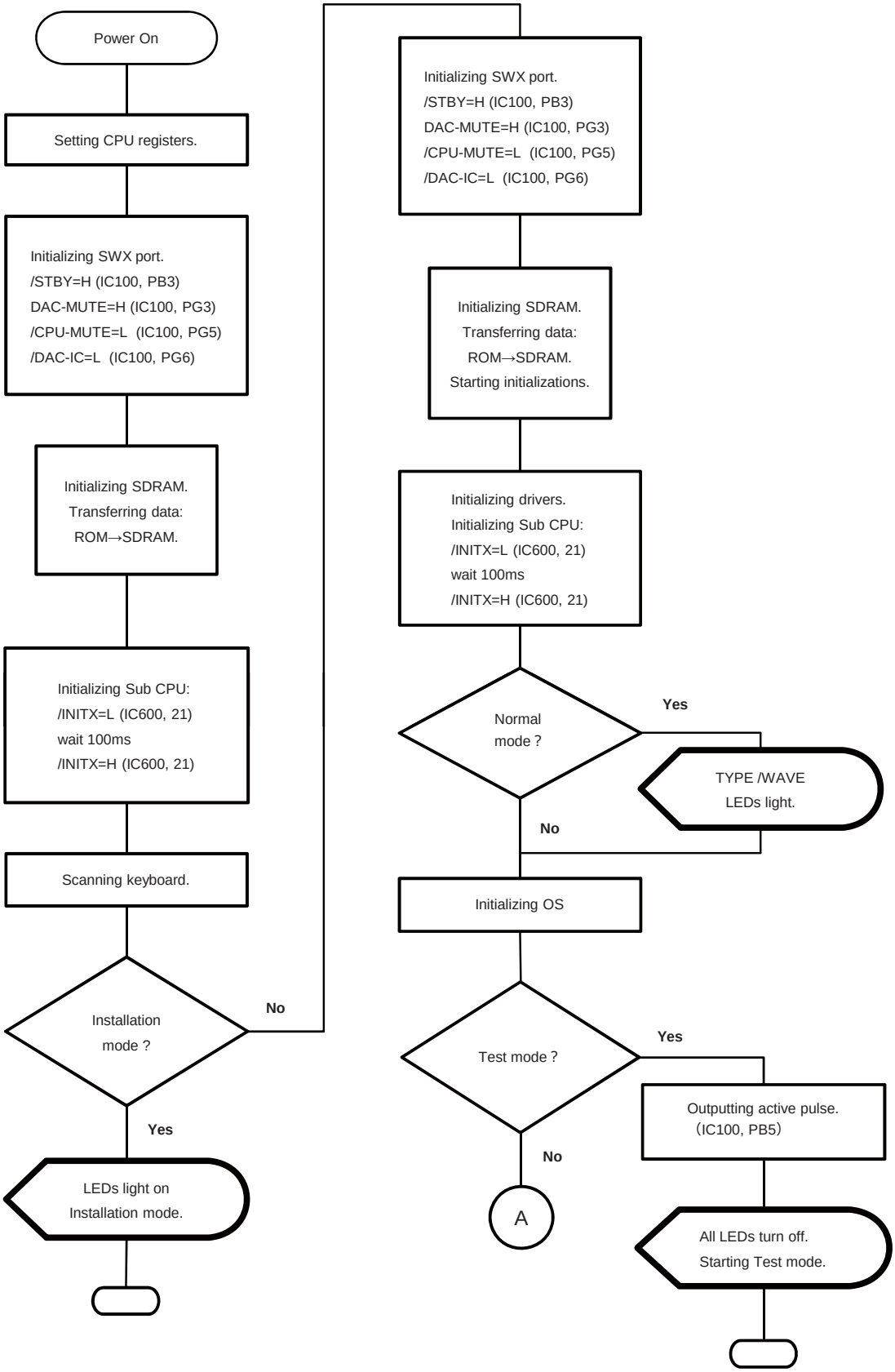
2-6. Knob Test Item List

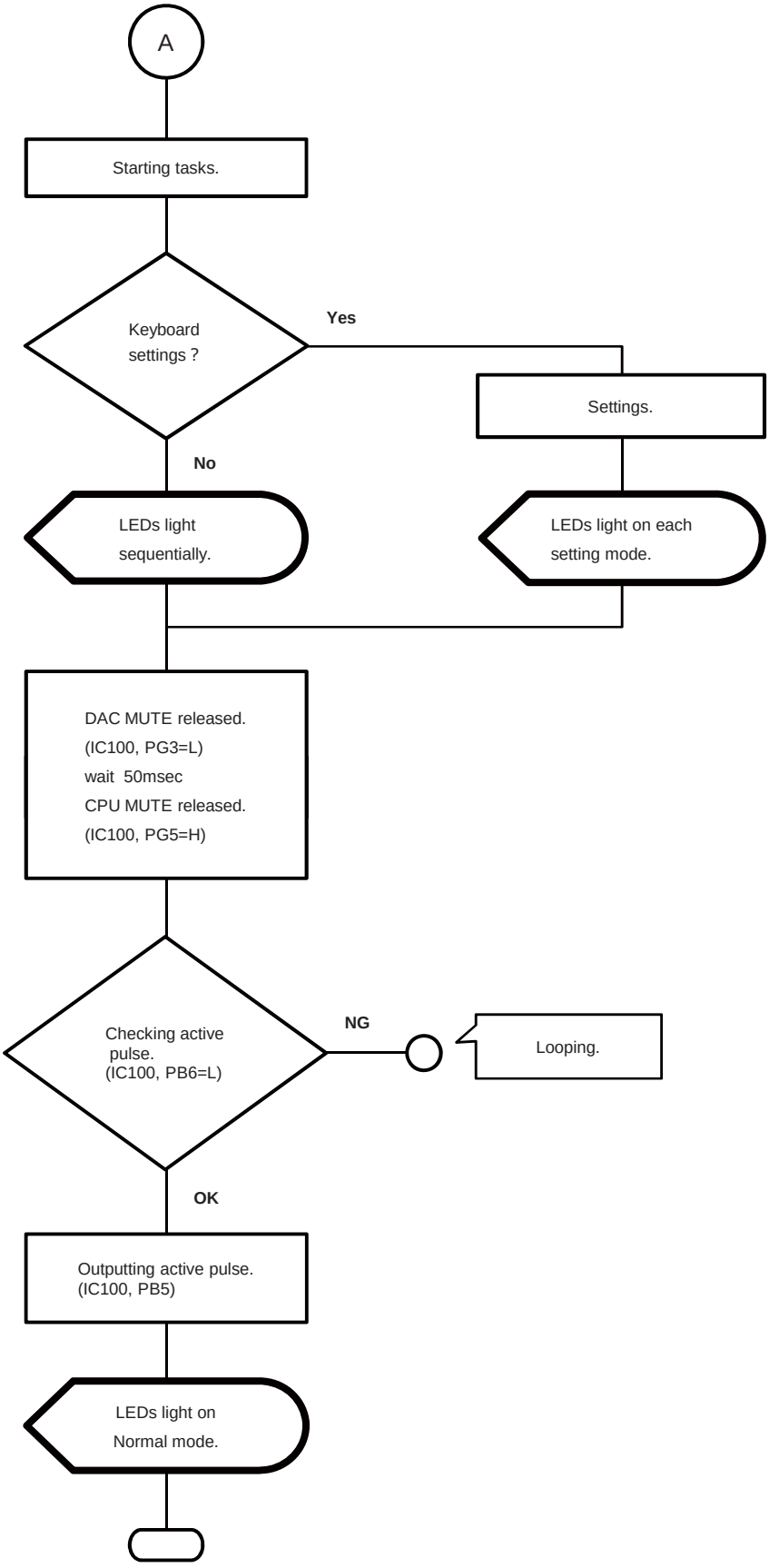
Order	Knob name	Note No.
1	DRIVE: MIN	C3
2	DRIVE:MAX	C4
3	TREMOLO/WAH:DEPTH:MIN	C3
4	TREMOLO/WAH:DEPTH:MAX	C4
5	TREMOLO/WAH:RATE:MIN	C3
6	TREMOLO/WAH:RATE:MAX	C4
7	CHORUS/PHASER:DEPTH:MIN	C3
8	CHORUS/PHASER:DEPTH:MAX	C4
9	CHORUS/PHASER:SPEED:MIN	C3
10	CHORUS/PHASER:SPEED:MAX	C4
11	D.DELAY/A.DELAY:DEPTH:MIN	C3
12	D.DELAY/A.DELAY:DEPTH:MAX	C4
13	D.DELAY/A.DELAY:TIME:MIN	C3
14	D.DELAY/A.DELAY:TIME:MAX	C4
15	REVERB:DEPTH:MIN	C3
16	REVERB:DEPTH:MAX	C4

3. Other Test Items (Check in normal mode)

No.	Test item	Procedure
—	**Popping noise Output Phones**	Measures the popping noise level that occurs when the power is turned on and off. 1) Connect an oscilloscope to the [PHONES] or [OUTPUT L/MONO]/[OUTPUT R] jack on the rear panel. 2) Set the [VOL] slider to MAX. 3) Press the [⏻] (Standby/On) switch to turn the reface on and off, while measuring the level of the popping noise from the L and R channels on the oscilloscope. If the value is within the range below, the specifications are satisfied. [PHONES] (33 Ω load) • L and R: 1.0 V peak to peak or less [OUTPUT] (10 kΩ load) • L and R: 0.5 V peak to peak or less
—	**Noise Level Check**	Measures whether the noise level is acceptable. 1) Connect a level meter (using an fc = 15 kHz low pass filter) to the [PHONES] or [OUTPUT L/MONO]/[OUTPUT R] jack on the rear panel. 2) Set the [VOL] slider to MAX. 3) Use the level meter to check the output level values for the L and R channels. If the value is within the range below, the specifications are satisfied. [PHONES] (33 Ω load) • L/R: -90.0 dBu or less [OUTPUT] (10 kΩ load) • L/R: -90.0 dBu or less * Do not plug any connectors into the [AUX IN] jack.

■ SYSTEM BOOTING FLOWCHART




A
Starting tasks.
Keyboard settings ?
Yes
Settings.
No
LEDs light sequentially.
LEDs light on each setting mode.
DAC MUTE released.
(IC100, PG3=L)
wait 50msec
CPU MUTE released.
(IC100, PG5=H)
Checking active pulse.
(IC100, PB6=L)
NG
Looping.
OK
Outputting active pulse.
(IC100, PB5)
LEDs light on Normal mode.

■ DME/DMO Circuit board Test Method

This explains the points to check whether DME/DMO circuit board has a failure or not.

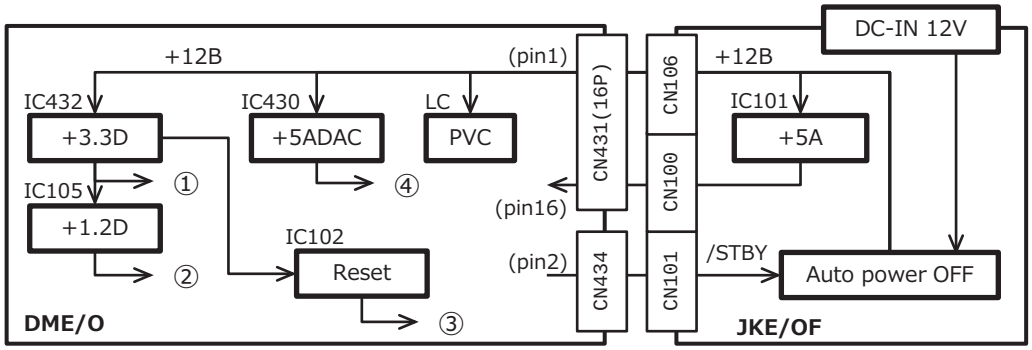
Caution:

- Use the genuine AC adaptor PA-130 or PA-130B for checking.

Problems and Check points

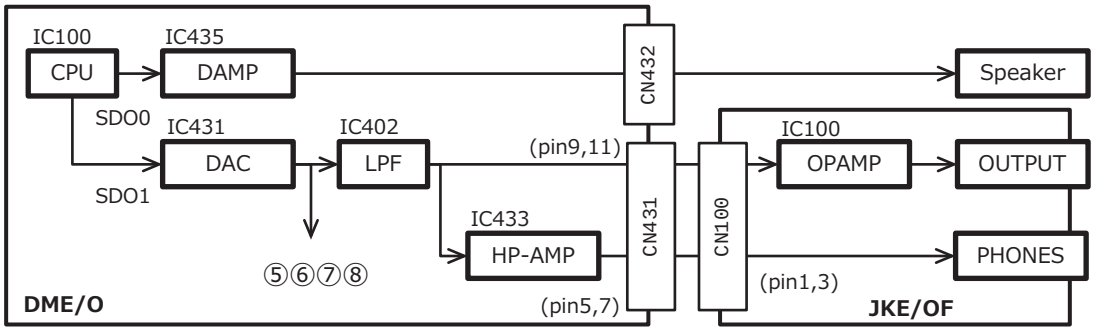
- No sound, and LEDs don't light after pressing [⏻] standby/on switch.

LED	Speakers	OUTPUT	PHONES	Check points and Possible defective parts
X	**X**	**X**	**X**	Check the voltages of +12B at CN431:pin1 and +5A at CN431:pin16. OK : /STBY at CN434:pin2, +3.3D at ①, +1.2D at ②, /RES1 at ③ * When checking points ②③, remove the shield from DM PCB. NG: CN106 of JKE/OF under MK PCB, JKE/OF PCB

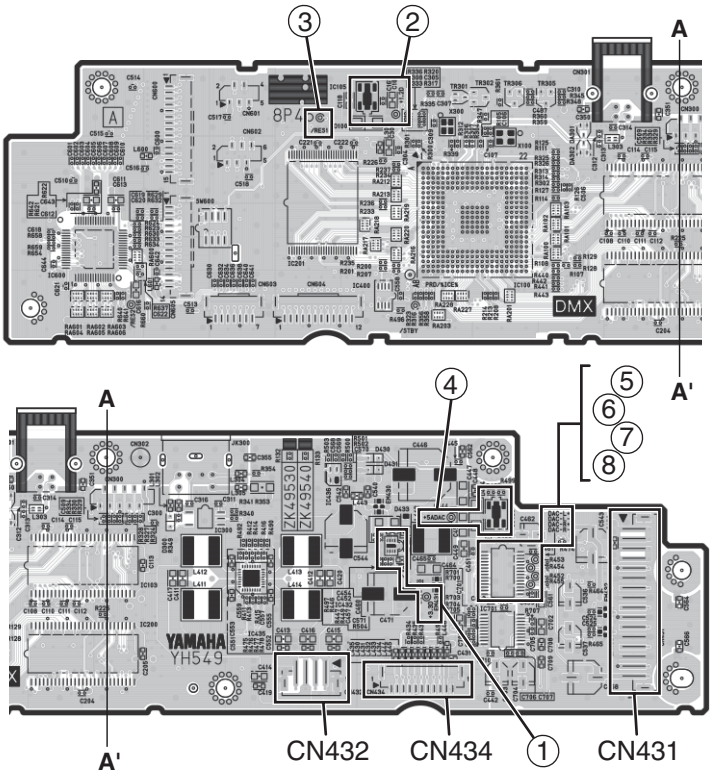


- No sound or distorted sound: Check the points depending on output failures below.

case	Speakers	OUTPUT	PHONES	Check points and Possible defective parts
(A)	**X**	**X**	**X**	Check the ERR-DETECT pulse at IC434:pin1 on back of DME/O PCB. OK: ROM, RAM, keyboard assembly, CPU/PWB / NG: CPU/PWB
(B)	**X**	OK	OK	No sound: Check the results of Test program No.9. OK: Settings (Factory reset) / NG: Refer to "Distorted sounds". Distorted sounds: Check the outputs from DAMP at CN432. OK: Speakers or Baffles / NG: PVCC, DAMP, CPU/PWB
(C)	OK	**X**	**X**	Check the outputs from DAC at ⑤⑥⑦⑧. OK: CN100 of JKE/OF, +5A at CN431, IC402 on back of DME/O PCB NG: Test program No.11, +5ADAC at ④, DAC, CPU/PWB
(D)	OK	OK	**X**	Check the connection of CN100:pin1,3 on JKE/OF PCB. OK: HP-L/R at CN431:pin5,7, IC433 on back of DME/O PCB Lines between IC402 and IC433
(E)	OK	**X**	OK	Check the OUT-L/R signals at CN431:pin9,11. OK: IC100 of JKE/OF / NG: Lines between IC402 and CN431:pin9,11



IC	Supply Voltage			Mute Function				
CPU	+12B	+3.3D	+1.2D	/RES1	ERR-DETECT	/CPU-MUTE	SPOFF	DAC MUTE
DAMP		PVCC		/MUTE			SPOFF	
DAC		+5ADAC						DAC MUTE
LPF		+5A						
OPAMP				/MUTE (Mute circuit) ▶ OUTPUT PHONES				
HPAMP								



reface CP

PARTS LIST

■ CONTENTS

OVERALL ASSEMBLY..... 2
UPPER CASE ASSEMBLY..... 4
LOWER CASE ASSEMBLY..... 6
KEYBOARD ASSEMBLY..... 8
ELECTORICAL PARTS..... 10

* DESTINATION ABBREVIATIONS

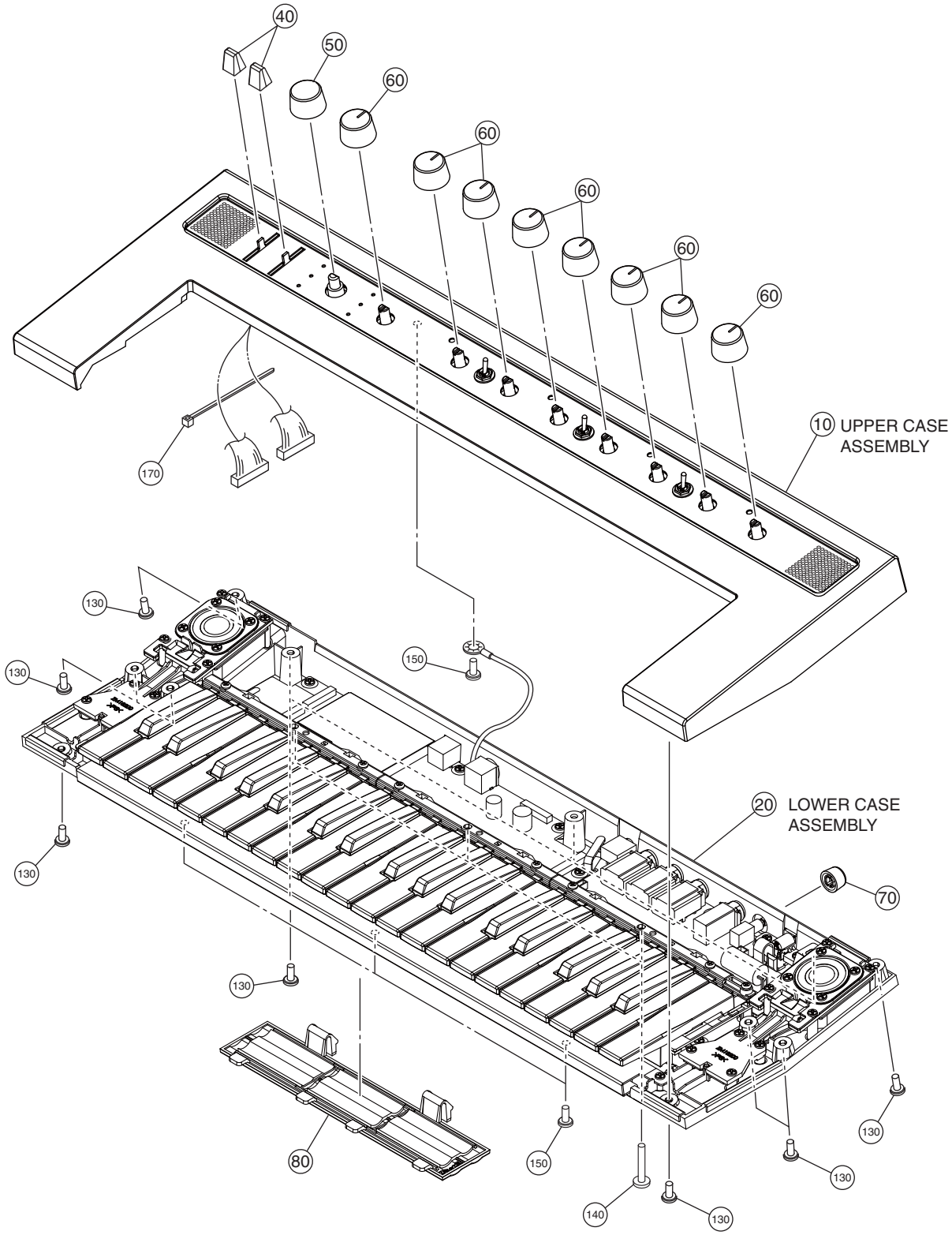
A:	Australian model	O:	Chinese model
B:	British model	Q:	South-east Asia model
C:	Canadian model	T:	Taiwan model
D:	German model	U:	U.S.A. model
E:	European model	V:	General export model (110V)
F:	French model	W:	General export model (220V)
H:	North European model	N,X:	General export model
I:	Indonesian model	Y:	Export model
J:	Japanese model	K:	Korean model
M:	South African model	P:	Brazilian model

■ WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

- The numbers “QTY” show quantities for each unit.
- The parts with “--” in “PART NO.” are not available as spare parts.
- This mark “ } ” in the REMARKS column means these parts are interchangeable.
- The second letter of the shaded ( ) part number is O, not zero.
- The second letter of the shaded ( ) part number is I, not one.

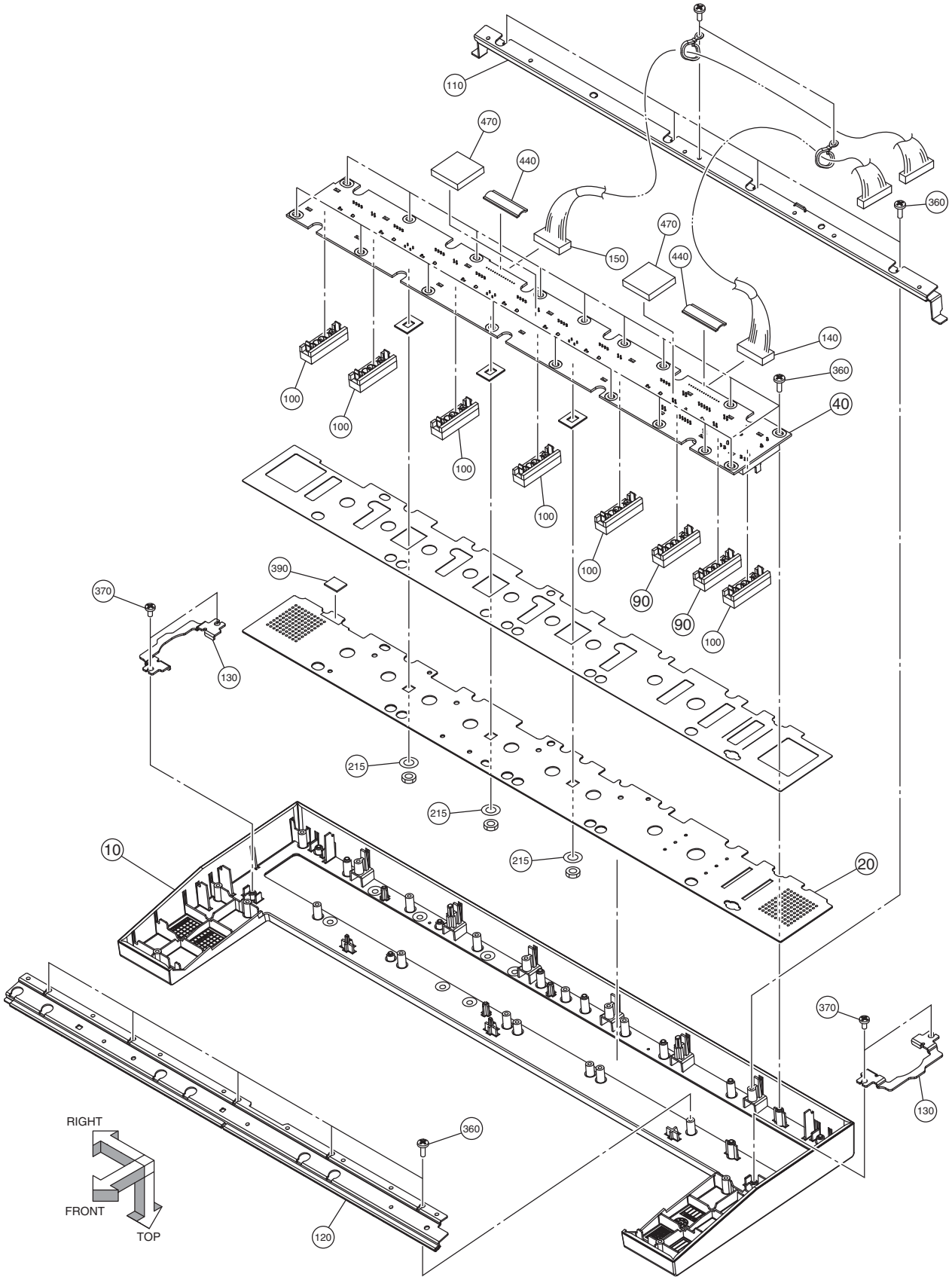
■ OVERALL ASSEMBLY



	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY
			OVERALL ASSEMBLY		総組立	reface CP	
		--	Overall assembly	reface CP	総組立	reface CP (ZP84970)	
		--	"	"	〃	for Japan only (ZQ67720)	
	10	--	Upper case assembly		上ケースAss'y	(ZP85000)	
	20	--	Lower case assembly		下ケースAss'y	(ZM68360)	
	20	--	"	"	〃	for Japan only (ZQ67680)	
*	40	**ZM183600**	slider knob narrow	R-CS/CP/YC/DX	スライダー用ノブ小	VOL, OCT knob	2
*	50	**ZM710900**	Rotary encoder knob assembly	R-CP/YC	エンコーダノブ	TYPE knob	
*	60	**ZM711000**	Rotary Pot knob assembly	R-CP	ボリュームノブ	DRIVE, DEPTH x4, RATE, SPEED, TIME knob	8
*	70	**ZQ0257I0**	Push switch knob	R-CS/CP/YC/DX	プッシュツマミ	Standby/On knob	
*	80	**ZM711100**	Battery lid assembly	R-CS/CP/YC/DX	電池蓋		
	130	**WE774400**	(B-TITE) +Binding head screw	3x8 MFZN2W3	BタイトBIND		11
*	140	**WF303800**	+Binding head screw	3x16 MFZN2B3	小ネジ+BIND		3
	150	**WE959800**	+Binding head screw	3x8 MFZN2W3	小ネジ+BIND		4
	170	--	binding tie	GT-100M HUA WEI	インシュロックタイ	to DM-PN wires (WB40800)	
			Accessories		付属品		
*		**ZP893500**	MIDI cable MD6P-DIN	mini-FEMALE, L=100	MIDI変換ケーブル	mini DIN to FEMALE	
⚠		**ZP655800**	AC adaptor set	PA-130B E	-	E	
⚠		**ZP655900**	AC adaptor set	PA-130B B	-	B	
⚠		**WK014600**	AC adaptor	PA-130 U	-	U	
⚠		**ZP656000**	AC adaptor set	PA-130B K	-	K	
⚠		**ZP656100**	AC adaptor set	PA-130B BRA	-	P	
⚠		**ZP656400**	AC adaptor set	PA-130B A	-	A	
⚠*		**ZQ165700**	-	PA-130B J	アダプターセット	J	
⚠		**ZP656200**	AC adaptor set	PA-130B CHN	-	O	

＊: New Parts(新規部品)

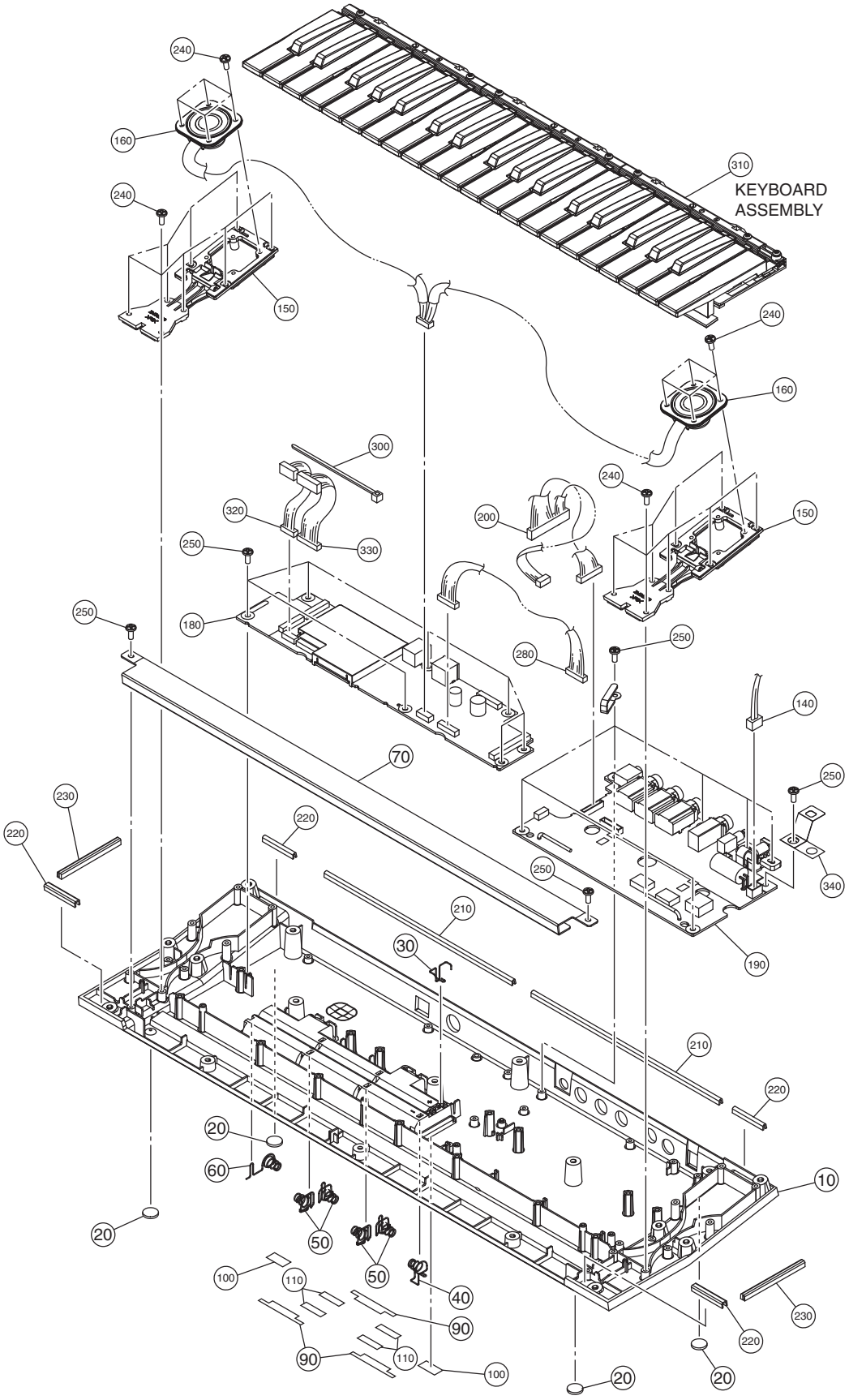
■ UPPER CASE ASSEMBLY



	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS		QTY
			UPPER CASE ASSEMBLY		上ケースAss'y			
		--	Upper case assembly		上ケースAss'y	reface CP	(ZP85000)	
*	10	ZP0533I0	printed Upper case	R-CP	上ケース印刷品CP			
*	20	ZR663500	printed Aluminium PANEL	R-CP	パネル印刷品CP			
*	40	ZK495700	Circuit board	PNE	PNEシート			
	90	--	LED guide assembly	R-CS/CP/YC	LEDガイド	TYPE L/R	(ZP89840)	2
	100	--	LED guide 2	R-CS/CP/YC	LEDガイド2	spacer	(ZP5801I)	6
	110	--	reinforcing metal	R-CS/CP/YC/DX	補強金具		(ZM18460)	
	120	--	reinforcing metal 2	R-CS/CP/YC	補助板金		(ZM71170)	
	130	--	support metal L/R	R-CS/CP/YC/DX	サポート板金L/R		(ZP56590)	2
	140	--	connector assembly	DM-PN-1 wires	DM-PN束線1		(ZN09410)	
	150	--	connector assembly	DM-PN-2 wires	DM-PN束線2		(ZN09420)	
*	215	ZQ206100	washer	6.2x11.5 R-CP	ワッシャー			3
	360	WE774400	(B-TITE) +Binding head screw	3.0x8 MFZN2W3	Bタイト+BIND			27
*	370	WF026300	(B-TITE) +Binding head screw	2.6x5 MFZN2W3	Bタイト+BIND			4
	390	--	gasket	R-CS/CP/YC/DX	ガスケット		(ZP85460)	
	440	--	cushion PE	32x10x1	クッションPE		(ZQ20630)	2
	470	--	cushion PE	25x25x5	クッションPE		(ZT21040)	2

*: New Parts(新規部品)

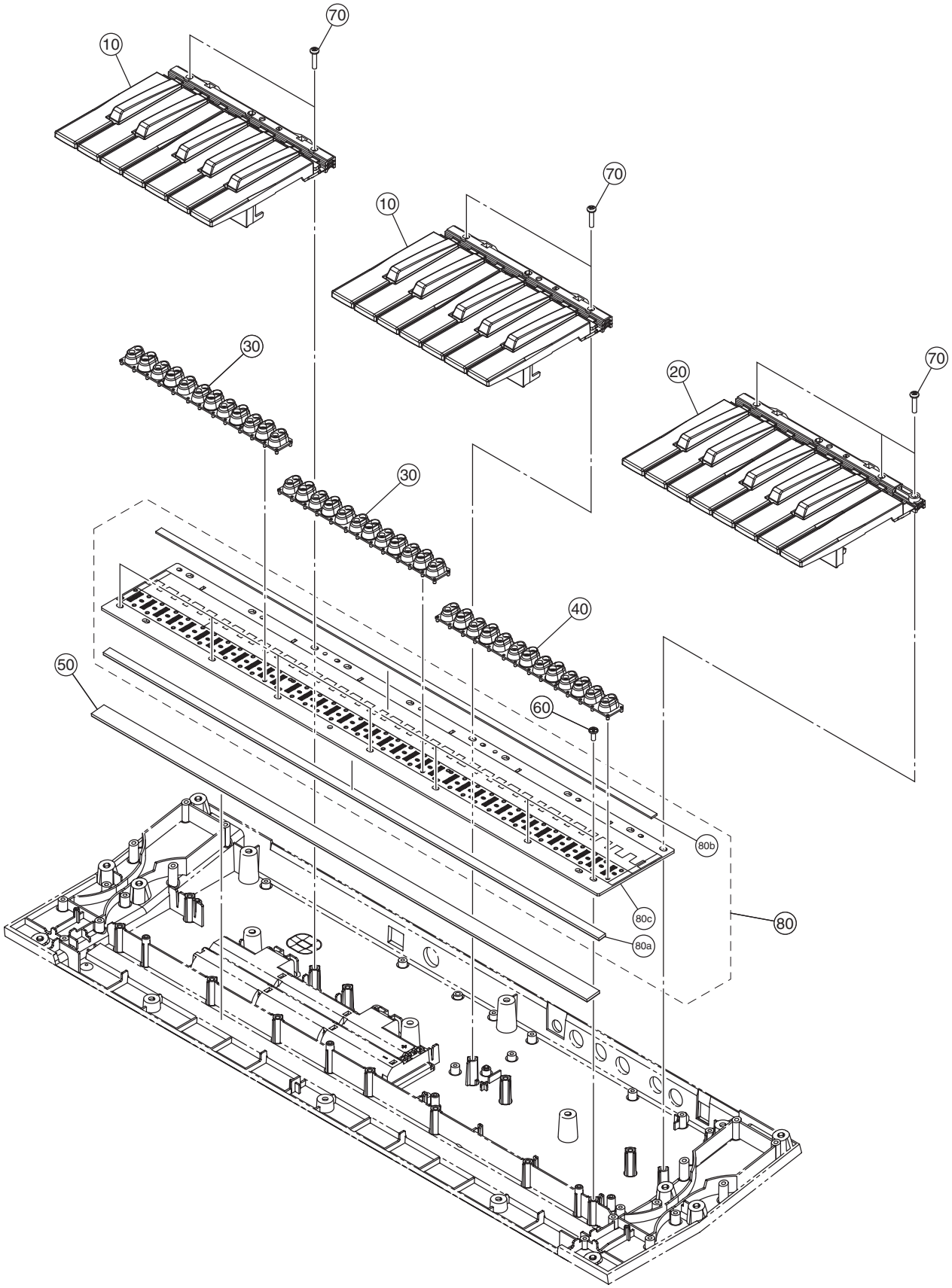
■ LOWER CASE ASSEMBLY



	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY
			LOWER CASE ASSEMBLY		下ケースAss'y		
		--	Lower case assembly		下ケースAss'y	reface CP (ZM68360)	
		--	"	"	〃	for Japan only (ZQ67680)	
*	10	ZM1819I0	molding Lower case	R-CS/CP/YC/DX	下ケース成形品		
*	20	ZQ052000	rubber FOOT	R-CS/CP/YC/DX	ゴム脚		4
*	30	ZM711300	Battery terminal A	R-CS/CP/YC/DX	接点バネA		
*	40	ZM711400	Battery terminal B	R-CS/CP/YC/DX	接点バネB		
*	50	ZM711500	Battery terminal C	R-CS/CP/YC/DX	接点バネC		4
*	60	ZM711600	Battery terminal D	R-CS/CP/YC/DX	接点バネD		
*	70	ZP276400	painted Front RAIL	R-CS/CP/YC/DX	口棒金具		
*	90	ZP281300	nonwoven cloth BT2	42.5x7x0.45	不織布BT2	on Battery case	3
*	100	ZP281400	nonwoven cloth	13x8x0.35	不織布BT	"	2
*	110	ZP281500	nonwoven cloth	18x5x0.35	不織布BT	"	4
	140	--	connector assembly	JK-BATT wires	JK-BATT束線	(ZN09530)	
*	150	ZM711900	Speaker BAFFLE assembly	R-CS/CP/YC/DX	SPバッフルAss'y		2
*	160	ZP850500	Speaker assembly	R-CS/CP/YC/DX	-	E,B,U,K,P,A,O,Y	
*	160	ZQ676600	-	R-CS/CP/YC/DX	スピーカーAss'y	J (for Japan only)	
*	180	ZK495300	Circuit board	DME	DMEシート		
*	190	ZQ036500	Circuit board	JKE	JKEシート		
	200	--	connector assembly	DM-JK-2 wires	DM-JK束線2	(ZN09380)	
	210	--	cushion PE	201x8x1	クッションPE	on case edge (ZM64360)	2
	220	--	cushion PE	30x12x1	クッションPE	" (ZP28370)	4
	230	--	cushion PE	59x12x1	クッションPE	" (ZP28380)	2
	240	WE774400	(B-TITE) +Binding head screw	3.0x8 MFZN2W3	Bタイト+BIND		24
	250	WE985800	(B-TITE) +Binding head screw	2.6x6 MFZN2W3	Bタイト+BIND		16
	280	--	connector assembly	DM-JK-1 wires	DM-JK束線1	(ZN09370)	
	300	--	binding tie	GT-100M HUA WEI	インシュロックタイ	to DM-MK wires (WB40800)	
	310	--	KEYBOARD assembly	14Y-C37	14Y-C37鍵盤	(ZN24270)	
	320	--	connector assembly	DM-MK-1 wires	DM-MK束線1	(ZN09440)	
	330	--	connector assembly	DM-MK-2 wires	DM-MK束線2	(ZN09450)	
	340	--	conductive tape		導電テープ	on JK circuit board (ZP85480)	

＊：New Parts(新規部品)

■ KEYBOARD ASSEMBLY



	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY
			KEYBOARD ASSEMBLY	14Y-C37	１４Ｙ－Ｃ３７鍵盤	14Y / 37key / 2M	
		--	KEYBOARD assembly	14Y-C37	１４Ｙ－Ｃ３７鍵盤	(ZN24270)	
*	10	**ZN242500**	OCTAVE Key assembly	14Y C-B	ＯＣＴキー１４Ｙ	from C to B keys	2
*	20	**ZN242600**	OCTAVE+ Key assembly	14Y C-C	ＯＣＴ＋キー１４Ｙ	from C to C keys	
*	30	**ZN233800**	Rubber Contact 12key	14Y OCT 2M	接点ゴム１２キー		2
*	40	**ZN233900**	Rubber Contact 13key	14Y OCT 2M	接点ゴム１３キー		
*	50	**ZN234200**	FELT L	431.5x11 WHITE	フェルトＬ	Lower side	
	60	**WE774400**	(B-TITE) +Binding head screw	3x8 MFZN2W3	Ｂタイト＋ＢＩＮＤ		7
	70	**WE983200**	(P-TITE) +Binding head screw	3x16 MFZN2B3	Ｐタイト＋ＢＩＮＤ		7
	80	--	Circuit board MK assembly		ＭＫシートＡｓｓ'ｙ	(ZQ73070)	
		--	Circuit board MK assembly		ＭＫシートＡｓｓ'ｙ	(ZQ73070)	
*	80a	**ZN234300**	FELT U	429x5 WHITE	フェルトＵ	Upper side	
*	80b	**ZN234500**	Limit stopper	14Y	リミットストッパー		
*	80c	**ZN235200**	Circuit board	14Y-37MK	１４Ｙ－３７ＭＫシート		

*：New Parts(新規部品)

■ ELECTORICAL PARTS

DME

	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY
			ELECTRICAL PARTS		電気部品	reface CP	
*		**ZK495300**	Circuit board	DME	DMEシート	(YH549A0)	
*		**ZQ036500**	Circuit board	JKE	JKEシート	(YG211D0)	
*		**ZK495700**	Circuit board	PNE	PNEシート	1/2 (YG208C0)	
*		**ZN235200**	Circuit board	14Y-37MK	14Y-37MKシート	1/2 (YG387D0)	
*		**ZP850500**	Speaker assembly	R-CS/CP/YC/DX	-	E,B,U,K,P,A,O,Y	
*		**ZQ676600**	-	R-CS/CP/YC/DX	スピーカーAss'y	J (for Japan only)	
*		**ZK495300**	Circuit board	DME	DMEシート	(YH549A0)	
	CN301	**V680260R**	USB terminal	Type B 4P SE	USB-B端子	USB	
	CN302	**--**	Wiring assembly	DM-EARTH	DM-EARTH束線	(ZP88970)	
	JK300	**VZ74380R**	mini DIN connector	6P MD-S6100	ミニDIN端子	MIDI	
	K100	**--**	shield	DM	DMシールド	soldered (ZP59840)	
	IC100	**--**	IC CPU	R8A02042BG	CPU	SWX08 (YC479A0)	
	IC101	**XY806A0R**	IC logic	TC7WH14FU (TE12L,F)	ロジックIC		
	IC400	**XY806A0R**	"	"	"		
	IC102	**YC386A00**	IC Voltage Detector	R3112N301A-TR-FE	電源検出IC	Reset1	
	IC103	**X3584E00**	IC SDRAM	W9812G6JH-6	メモリIC 128M	work SDRAM	
	IC105	**YE238A00**	IC Voltage-Regulator	RP132H121D-T1-FE	電源IC	+1.2D	
	IC200	**XZ414G00**	IC SDRAM	W9864G6KH-6	メモリIC	DSP SDRAM	
*	IC201	**YG930C00**	IC ROM	S29GL512S10TFI020	書込済ROM	Program/Wave R-CP	
*	IC300	**ZM214700**	photo coupler	TLP2362 (TPL, E(O	フォトカプラ	MIDI IN	
	IC401	**X2377A0R**	IC logic	SN74LV21APWR	ロジックIC	Mute, DAMP-OFF	
*	IC402	**X6790A00**	IC OPAMP	NJM2737RB1	アンプIC		
	IC403	**X2474A01**	IC OPAMP	NJM4580V-TE2	アンプIC		
*	IC430	**YG332A00**	IC Voltage-Regulator	R1155H050B-T1-FE	電源IC	+5ADAC	
	IC430	**--**	IC	R1154H050B-T1-FE	電源IC	(X8944A0)	
	IC431	**X8324A00**	IC DAC	AK4396VF-E2	DACIC	DAC	
	IC432	**YF258A00**	IC DC-DC	R1245K003C-TR	電源IC	+3.3D	
	IC433	**YC967A00**	IC AMP HP	MAX9820ETB+T 95MW	アンプIC	to PHONES	
	IC434	**X8506A02**	IC logic	TC74VHC123AFT EL,K	ロジックIC	CPU Error detection	
*	IC435	**YF663B00**	IC DAMP	YDA176-QZE2	アンプIC	to Speakers	
	IC436	**X7895A00**	IC Voltage Detector	S-80920CNNB-G8QT2G	デジタルIC		
*	IC600	**YG976B00**	IC Sub CPU	MB9AF141LAPMC1	書込済CPU	Key, Panel scan	
	IC701	**X7357B00**	IC ADC	PCM1803ADBR	ADCIC	ADC	
	C169	**WS044500**	Capacitor	470 4V	酸化ニオブコンデンサ		
	C446	**UF14833R**	Electrolytic Capacitor CHIP	330 25V	チップケミコン	+12B	
	C458	**UF027470**	Capacitor	47 10V	チップケミコン		
	C462	**WC891800**	Capacitor	10.0 16.0V RVO	ケミコン PURE		
	C471	**UF12822R**	Electrolytic Capacitor CHIP	220 10V	チップケミコン	+3.3D	
	C536	**UF037100**	Electrolytic Capacitor CHIP	10 16V	チップケミコン		
	C537	**UF037100**	"	"	〃		
	C703	**UF037100**	"	"	〃		
	C704	**UF037100**	"	"	〃		
	C543	**UF02810R**	Electrolytic Capacitor CHIP	100 10V	チップケミコン		
	C544	**WC37000R**	Electrolytic Capacitor	220.00 35.0V	チップケミコン UD	PVCC	
	D100	**VT532501**	Diode	1SR154-400	ダイオード		
	D434	**--**	"	"	〃	(VT53250)	
	D300	**WG139300**	Diode	KDS4148U-RTK/P	ダイオード		
	D430	**WG139300**	"	"	〃		
	D431	**WG139300**	"	"	〃		
	D433	**WM940400**	Diode	RB070M-30TR	ダイオード		
	D600	**WW351600**	Diode	DB2J31400L	ダイオード		
	R353	**RD15447R**	Carbon Resistor CHIP	47.0 1/4 J	チップ抵抗		
	R411	**RA157560**	Metal film Resistor CHIP	56.0K 63M D RECT.	チップ金被抵抗		
	R415	**RA157560**	"	"	〃		
	R412	**RA157150**	Metal film Resistor CHIP	15.0K 63M D RECT.	チップ金被抵抗		
	R414	**RA157150**	"	"	〃		
	R416	**RA157150**	"	"	〃		
	R413	**RA157220**	Metal film Resistor CHIP	22.0K 63M D RECT.	チップ金被抵抗		
	R480	**RA157220**	"	"	〃		
	R481	**RA157220**	"	"	〃		
	R430	**RA157120**	Metal film Resistor CHIP	12.0K 63M D RECT.	チップ金被抵抗		
	R431	**RA157120**	"	"	〃		
	R432	**RA156220**	Metal film Resistor CHIP	2.2K 63M D RECT.	チップ金被抵抗		
	R433	**RA156220**	"	"	〃		
	R447	**RA156150**	Metal film Resistor CHIP	1.5K 63M D RECT.	チップ金被抵抗		
	R449	**RA156470**	Metal film Resistor CHIP	4.7K 63M D RECT.	チップ金被抵抗		
	R452	**RA156390**	Metal film Resistor CHIP	3.9K 63M D RECT.	チップ金被抵抗		
	-455	**RA156390**	"	"	〃		

*：New Parts(新規部品)

DME,JKE

	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY
	R456	**RA156680**	Metal film Resistor CHIP	6.8K 63M D RECT.	チップ金被抵抗		
	R457	**RA156680**	"	"	〃		
	R462	**RA156680**	"	"	〃		
	R463	**RA156680**	"	"	〃		
*	R458	**RA155560**	Metal film Resistor CHIP	560.0 63M D RECT.	チップ金被抵抗		
*	-461	**RA155560**	"	"	〃		
	R464	**RA155100**	Metal film Resistor CHIP	100.0 63M D RECT.	チップ金被抵抗		
	-467	**RA155100**	"	"	〃		
	R470	**RA156820**	Metal film Resistor CHIP	8.2K 63M D RECT.	チップ金被抵抗		
	R471	**RA156820**	"	"	〃		
	R501	**RA156820**	"	"	〃		
	R472	**RA157100**	Metal film Resistor CHIP	10.0K 63M D RECT.	チップ金被抵抗		
	R473	**RA157100**	"	"	〃		
	R502	**RA156560**	Metal film Resistor CHIP	5.6K 63M D RECT.	チップ金被抵抗		
	R504	**RA156100**	Metal film Resistor CHIP	1.0K 63M D RECT.	チップ金被抵抗		
	TR300	**VV556401**	Transistor 2SC	2412K Q,R,S	トランジスタ 2SC		
	TR303	**VV556401**	"	"	〃		
	-305	**VV556401**	"	"	〃		
	TR306	**VV556501**	Transistor 2SA	1037AK Q,R,S	トランジスタ 2SA		
	X100	**WM135200**	Resonator QUARTZ	16.9344M DSX321G	水晶振動子		
	X300	**ZP547600**	QUARTZ Crystal unit	48M DSO221SHF	水晶発振器		
*		**ZQ036500**	Circuit board	JKE	JKEシート	(YG211D0)	
	JK100	**VS11540R**	Phone jack	LGR4609-7100F	ホーンジャック（黒）	SUSTAIN	
	JK101	**VV943300**	Phone jack	HTJ-064-04A	ホーンジャック	PHONES	
	JK103	**VV943300**	"	"	〃	OUTPUT L/MONO	
	JK104	**VV943300**	"	"	〃	OUTPUT R	
	JK102	**ZA590000**	Mini-phone jack		ホーンジャック	AUX IN	
	JK300	**WZ704401**	DC power jack		DCIN端子	DC IN	
	C103	**WA66850R**	Electrolytic Capacitor	100.00 16V	ケミコン		
	C121	**WA66850R**	"	"	〃		
	C122	**WA66850R**	"	"	〃		
*	C104	**ZM449200**	Electrolytic Capacitor BP	33.0 10.0V	BPケミコン 5L		
*	C105	**ZM449200**	"	"	〃		
*	C116	**WA668100**	Electrolytic Capacitor	10.00 16V	ケミコン		
*	C117	**WA668100**	"	"	〃		
*	C164	**WA668100**	"	"	〃		
*	C165	**WA668100**	"	"	〃		
*	C118	**ZP919000**	Electrolytic Capacitor	2200 25.0V FORMING	ケミコン	+12B	
*	C139	**WA667800**	Electrolytic Capacitor	220.00 10V	ケミコン	+5A	
*	C145	**WA667800**	"	"	〃	+5A1	
*	C176	**WA667800**	"	"	〃		
*	C177	**WA667800**	"	"	〃		
*	C214	**WA667800**	"	"	〃	+5A	
	C140	**WA66840R**	Electrolytic Capacitor	47.00 16V	ケミコン		
	C141	**WA66840R**	"	"	〃		
	C162	**WA66820R**	Electrolytic Capacitor	22.00 16V	ケミコン		
	C163	**WA66820R**	"	"	〃		
*	C207	**WA669200**	Electrolytic Capacitor	100.00 25V	ケミコン		
*	C215	**WA669200**	"	"	〃		
*	D101	**ZQ176200**	Diode	RL202	ダイオード		
	D103	**WG139300**	Diode	KDS4148U-RTK/P	ダイオード		
	D113	**WG139300**	"	"	〃		
	D104	**VT532501**	Diode	1SR154-400	ダイオード		
	EM100	**WA04940R**	EMI Filer	DSS6NE32A222Q93A	EMIフィルタLC		
	EM102	**WA04940R**	"	"	〃		
	EM103	**WA04940R**	"	"	〃		
	EM104	**VI24310R**	EMI Filter	DSS6NB32A271Q93A	EMIフィルタLC		
	EM105	**VI24310R**	"	"	〃		
	EM106	**VG594300**	EMI Filter	DSS6NB32A101Q93A	EMIフィルタLC		
	-109	**VG594300**	"	"	〃		
	FT100	**ZA675500**	FET	TJ20A10M3	FET	+12B	
	IC100	**YA679A00**	IC OPAMP	NJM2737M	アンプIC	to OUTPUT	
	IC101	**YF323A00**	IC Voltage-Regulator	BA05CC0T 5V	電源IC	+5A, +5A1	
	IC102	**X5025A0R**	IC OPAMP	NJM4580M-D (TE2)	アンプIC	from AUX IN	
	J1385	**RD150001**	Carbon Resistor CHIP	0.0 1/4 J	チップ抵抗		
	J1387	**RD150001**	"	"	〃		
	L101	**VH74610R**	Choke Coil	09HN2003R0P1B	チョークコイル		
	R106	**RD15627R**	Carbon Resistor CHIP	2.7K 1/4 J	チップ抵抗		
	R137	**RD155101**	Carbon Resistor CHIP	100.0 1/4 J	チップ抵抗		

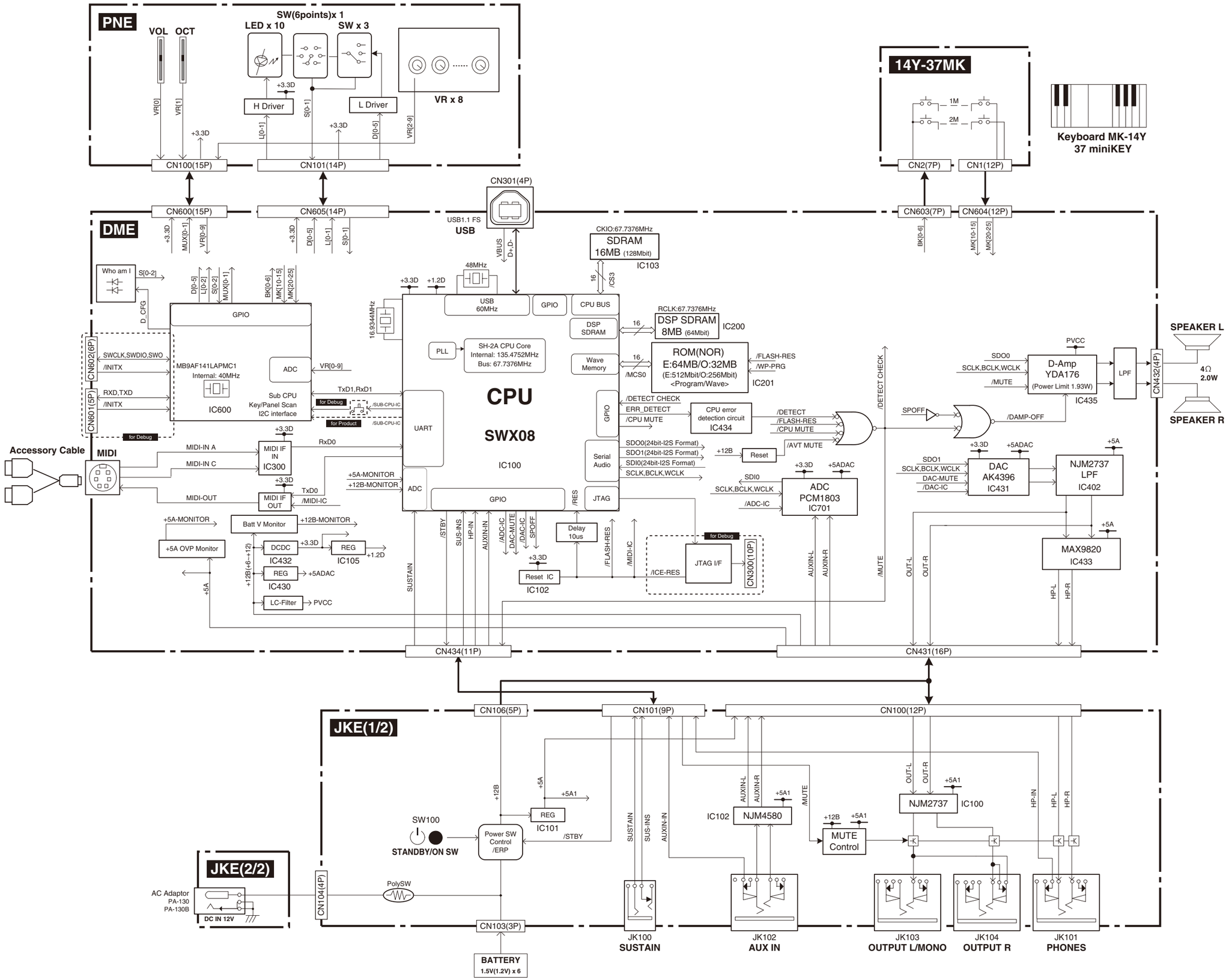
*：New Parts(新規部品)

JKE,PNE,14Y-37MK

	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY
	R138	**RD155101**	Carbon Resistor CHIP	100.0 1/4 J	チップ抵抗		
	R139	**RD155101**	"	"	〃		
	R157	**RD154180**	Carbon Resistor CHIP	18.0 1/4 J	チップ抵抗		
	R159	**RD154180**	"	"	〃		
	R166	**RD15415R**	Carbon Resistor CHIP	15.0 1/4 J	チップ抵抗		
	R167	**RD15415R**	"	"	〃		
	R175	**RD15615R**	Carbon Resistor CHIP	1.5K 1/4 J	チップ抵抗		
	R177	**RD15615R**	"	"	〃		
	R176	**RD15647R**	Carbon Resistor CHIP	4.7K 1/4 J	チップ抵抗		
	R178	**RD15647R**	"	"	〃		
	SW100	**VR140800**	push switch	SPPJ222200	プッシュSW	Standby/On	
*	TH300	**ZJ505600**	PolySwitch	RUEF160-AP	ポリスイッチ		
	TR100	**VV556401**	Transistor 2SC	2412K Q,R,S	トランジスタ2SC		
	TR101	**VV556401**	"	"	〃		
	TR108	**VV556401**	"	"	〃		
	TR109	**VV556401**	"	"	〃		
	TR103	**ZC799100**	Transistor	INC2002AC1-T112-1	トランジスタ		
	TR104	**ZC799100**	"	"	〃		
	TR106	**ZC799100**	"	"	〃		
	TR107	**ZC799100**	"	"	〃		
	TR110	**WK752300**	Transistor	ISA1235AC1-T112-1E	トランジスタ		
	-113	**WK752300**	"	"	〃		
*		**ZK495700**	Circuit board	PNE	PNEシート	1/2 (YG208C0)	
		--	LED spacer		LEDスペーサー	(ZQ20930)	4
	VR100	**WN562700**	slide Variable Resistor	B 10.0K RS20111A9A	スライドVR	VOL	
*	VR101	**ZK566100**	slide Variable Resistor 5-click	B 10.0K RS20111C9A	スライドVR	OCT	
	VR102	**VQ67050R**	Rotary Pot	B 10.0K RK11K1130A0M	ロータリーボリューム	DRIVE, DEPTH x4,	
	-109	**VQ67050R**	"	"	〃	RATE, SPEED, TIME	
*	SW100	**ZK566600**	Rotary switch	SRBV160803 R-CP	ロータリーSW	TYPE	
*	SW101	**ZK567500**	Toggle switch	B-23A1P R-CP	トグルSW	TREMOLO/WAH	
*	-103	**ZK567500**	"	"	〃	CHORUS/PHASER	
						D.DELAY/A.DELAY	
*	LD100	**ZR956400**	Red LED	SLI-343URCT32	LED赤	Rd1, Rd2, Wr, Clv, Toy, CP	
*	-109	**ZR956400**	"	"	〃	TREMOLO/WAH,	
						CHORUS/PHASER,	
						D.DELAY/A.DELAY, REVERB	
	C109	**WA66850R**	Electrolytic Capacitor	100.00 16V	ケミコン	+3.3L	
	D104	**WW351600**	Diode	DB2J31400L	ダイオード		
	-109	**WW351600**	"	"	〃		
	D114	**WW351600**	"	"	〃		
	D115	**WW351600**	"	"	〃		
	D120	**WW351600**	"	"	〃		
	D121	**WW351600**	"	"	〃		
	D126	**WW351600**	"	"	〃		
	D127	**WW351600**	"	"	〃		
	R108	**RD15522R**	Carbon Resistor CHIP	220.0 1/4 J	チップ抵抗		
	R109	**RD155390**	Carbon Resistor CHIP	390.0 1/4 J	チップ抵抗		
*		**ZN235200**	Circuit board	14Y-37MK	14Y-37MKシート	1/2 (YG387D0)	
	D1	**WW351600**	Diode	DB2J31400L	ダイオード	37keys x 2M	
	-74	**WW351600**	"	"	〃		

＊: New Parts(新規部品)

■ reface CP BLOCK DIAGRAM



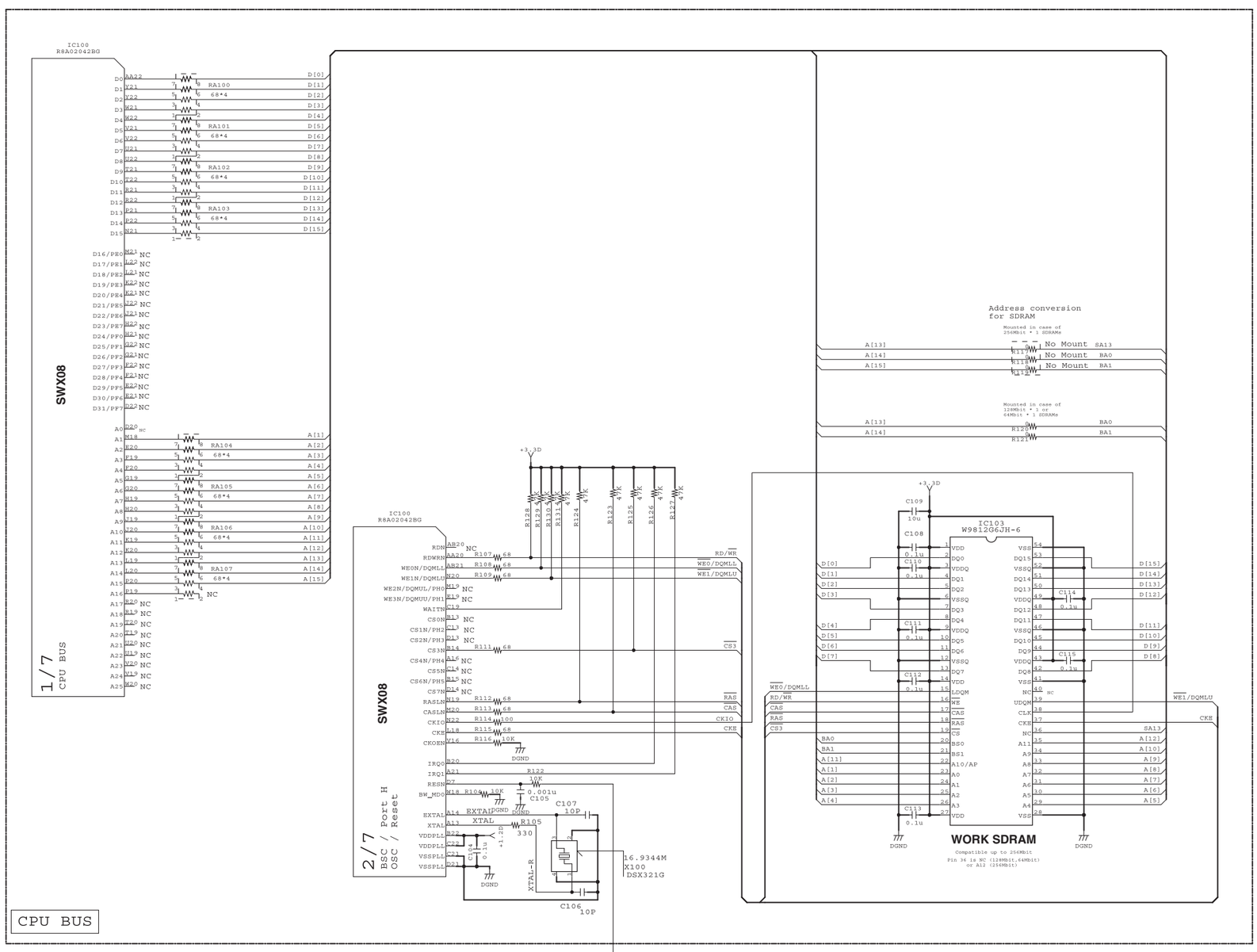
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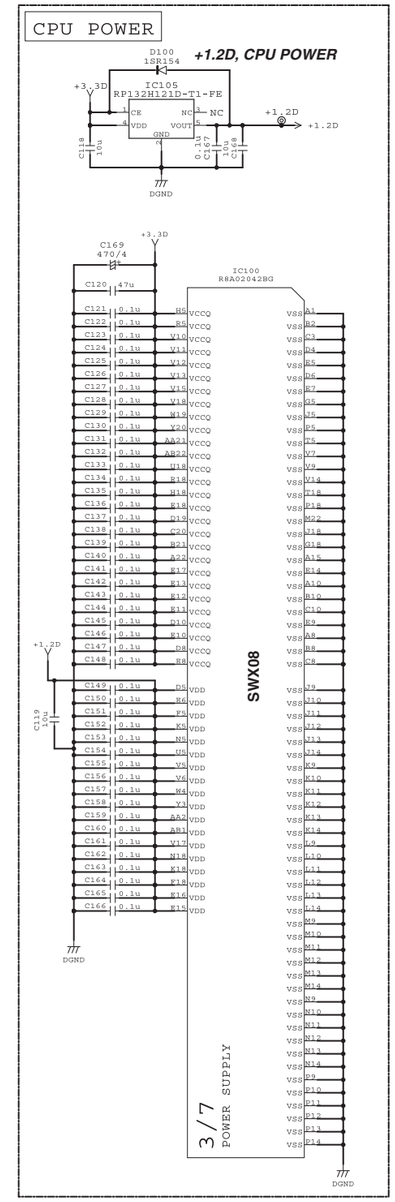
reface CP/YC OVERALL CIRCUIT DIAGRAM (DME/DMO)

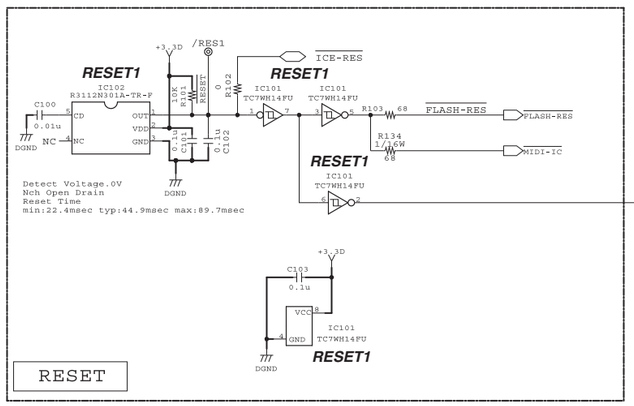
< Page 1 >

DME

DMO

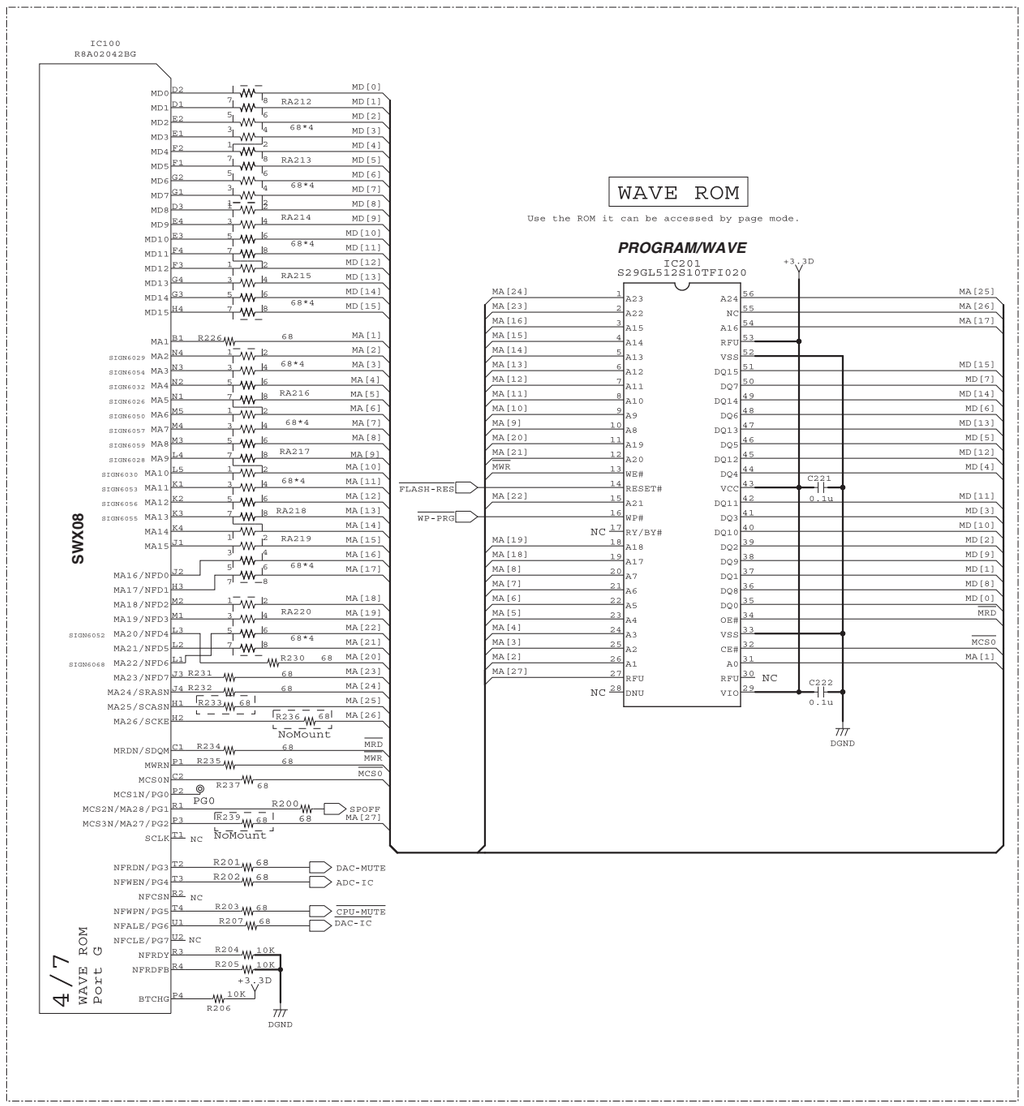


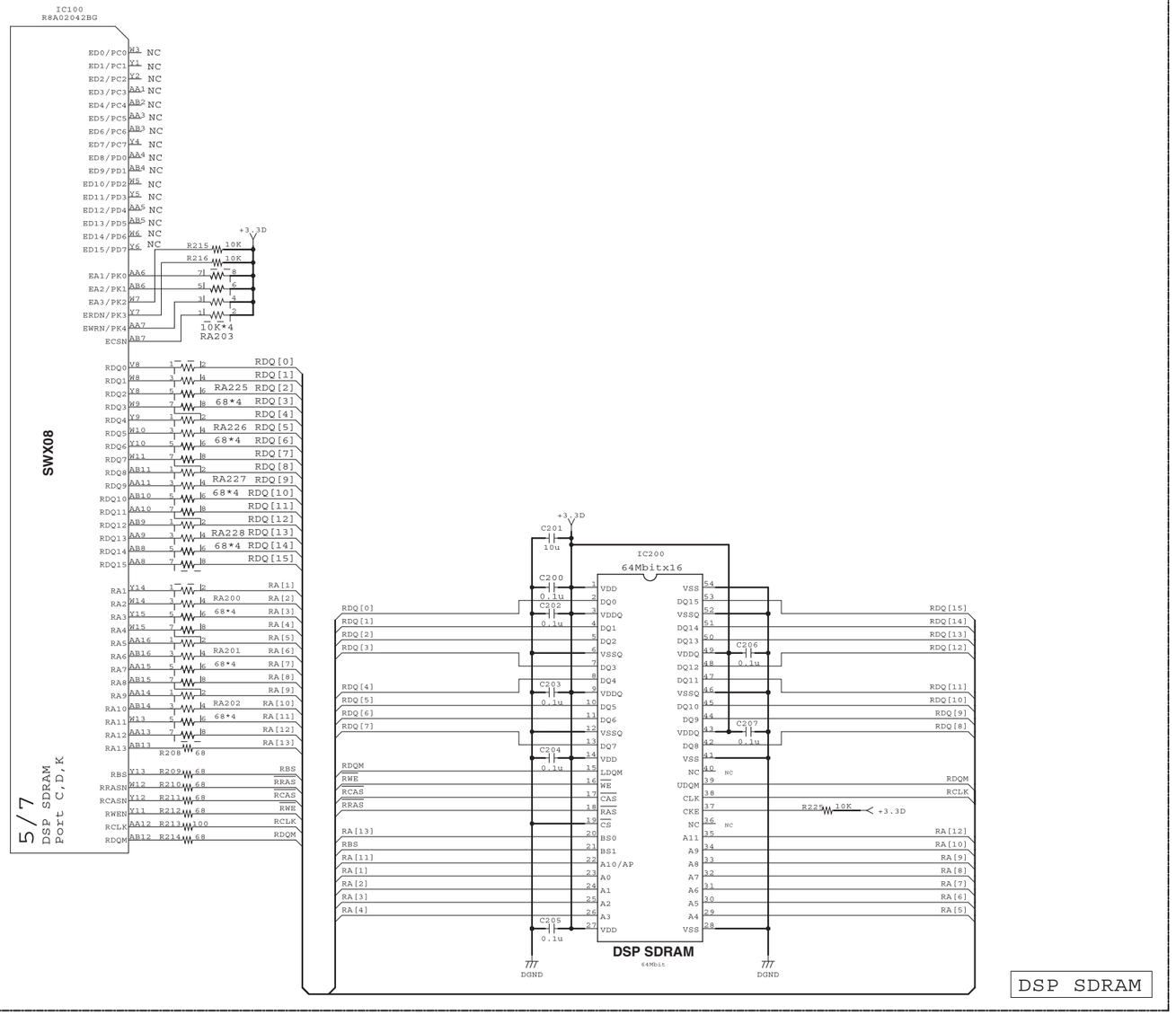




28CC1-2001147403-1

DME **DMO**





28CC1-2001147403-2 ⚠1

DME DMO

6/7
USB / AD /Test
E-Bus / Port A,B

SWX08

IC100
R8A02042BG

PA0-7: default value Input
PB0-7: default value Input

No Mount
R302
C302 0.1u
R314 1K
C301 0.1u
R313 1K
R325 68
R326 68
R303 0
R357 2.2K
R356 68
C317 0.001u
R358 1K
R315 2.2K
C303 0.1u
R316 1K
R323 68
R300 68
R301 68
R311 10K
R309 10K
R310 10K
R308 10K
R306 22
R307 22
R312 68
R304 10K 1/16W
R321 47K
R322 47K
R305 10K

HP-IN
AUXIN-IN
SUB-CPU-IC
WP-PRG
NoMount
ADGAIN
TUNE
STBY
SUS-INS
ERR-DETECT
DETECT-CHECK
PRD/ICE
TXD1
RXD1
+3.3D
DGND
UCLK

TR300
2SC2412K
33K
R337
R338 47K
SUB-CPU-IC

MIDI OUT
MIDI-IC
R343 18K
R346 1.5K
R342 22K
R344 10K
TR304
2SC2412K
TR303
2SC2412K

MIDI IN
IC300
TLP2362
R340 68
R341 1K
C311 0.1u
R349 220
KDS4148U-RTK/P
D300

JK300
MD-S6100-90
MIDI
L302
L301
C316 0.01u
R353 47 1/4W
C315 0.1u
L305
R354 47
L304
R353,R354 : 47Ω (for5mA_currentroop@3.3V)

USB
L303
DLP11SN900HL2L
UBR24-4K2100
CN301
TO HOST
SIGN6116
SIGN6117
TR301
DTC023JUBTL
2.2kΩ
47kΩ
TR302
KRA226S-RTK/P
10kΩ
2.2kΩ
R347 1.5K 1/16W
Inner Resistance:
±30% tolerance
C312 22P
C313 22P
C314 0.1u
1SS372
DA301
1SS372
DA302
50V
No Mount
C350 0.1u
C351 0.1u
C352 0.1u
C355 0.1u
C356 0.1u
FG

SWX08 VBUS:
5V Tolerant
TR306
2SA1037AK
R360 47K
TR305
2SC2412K
R359 1/16W 10K
R361 1/16W 10K
C310 0.001u
R345 10K
R348 1/16W 10K

SUSTAIN
+12B-MONITOR
+5A-MONITOR
C305 0.01u
R320 470K
R317 470K 1K
C307 0.01u
R332 1K
R335 1K
C308 0.01u
R333 470K
R336 1K
R318 10K
R319 10K
R331 470K
R339 270
X300
SG-310SCF
48M
C309 0.1u
L300
BK1608LM252-T
C304 0.1u
C306 10u

TDO
TDI
TCK
TMS
TRST
ASEBRKAK
ASEMD
TESTN

TEST
debug only
R324 10K
R327 10K
R329 10K
R330 10K
R334 10K
R328 1K
C300 0.1u
52808-1091
CN300
ICE-RES

28CC1-2001147403-3

■ reface CP/YC OVERALL CIRCUIT DIAGRAM (DME/DMO)

< Page 4 >

DME **DMO**

to JKE-CN106
JKOF-CN106
<Page 7 B5>

to JKE-CN100
JKOF-CN100
<Page 7 B6>

to JKE-CN101
JKOF-CN101
<Page 7 B7>

CN431 B16B-PH-SM4-TB

CN434 BM11B-GHS-TBT

Batt V Monitor

+5A OVP Monitor

+3.3D

2A 25V EM430 NPM21PC104R1E3D

Iout(max.) : 1.2A
switching frequency : 500kHz(450-550kHz)

4A 10V EM431 NPM21BC105B1A3D

L442 SMPA6045S100MT

IC432 R1245K003C-TR

SWX08

IC100 R8A02042BG

+5ADAC

DAC IC431 AK4396

PDN
L:Power down
SMUTE
H:Mute

Audio Data Format : 24Bit+I2S

AK4396 Output voltage : ±2.8Vpp(typ.)=+8.15dBu

R:metal film 1005

fc=83.4kHz
Gain=4.82dB
Vo=6.96dBu(4.88Vpp)@(DACOUT-6dB)

LPF IC402 NJM2737RB1(TE1)

LPF IC402 NJM2737RB1(TE1)

LPF IC402 NJM2737RB1(TE1) IC403 NJM4580V(TE2)

IC403 NJM4580V(TE2)

OUT-L

OUT-R

CPU ERROR DETECTION

IC434 TC74VHC123AFT(EL,K)

ERR-DETECT

Detection time:47ms

FLASH-RES

CPU-MUTE

MUTE

IC401 SN74LV21APWR

DETECT-CHECK

MUTE

SPOFF #3440

IC400 TC7WH14FU

DAMP-OFF

IC400 TC7WH14FU

ADC-IC

SPOFF

IC436 S-80920CNNB-G6QT2G

Vdd(min.):0.7V
detect voltage:2V
delay time:typ.0.57sec
(min.0.41-max.0.76sec)

SPOFF IC400 TC7WH14FU

MUTE IC401 SN74LV21APWR

SPOFF IC400 TC7WH14FU

PHONES IC433 MAX9820RTB+T

Gain=1.58dB

HPF fc=0.87Hz
LPF fc=107KHz

HP-L

HP-R

DIGITAL AMP IC435 YDA176-QZR2

DAMP-OFF

SPEAKER L

SPEAKER R

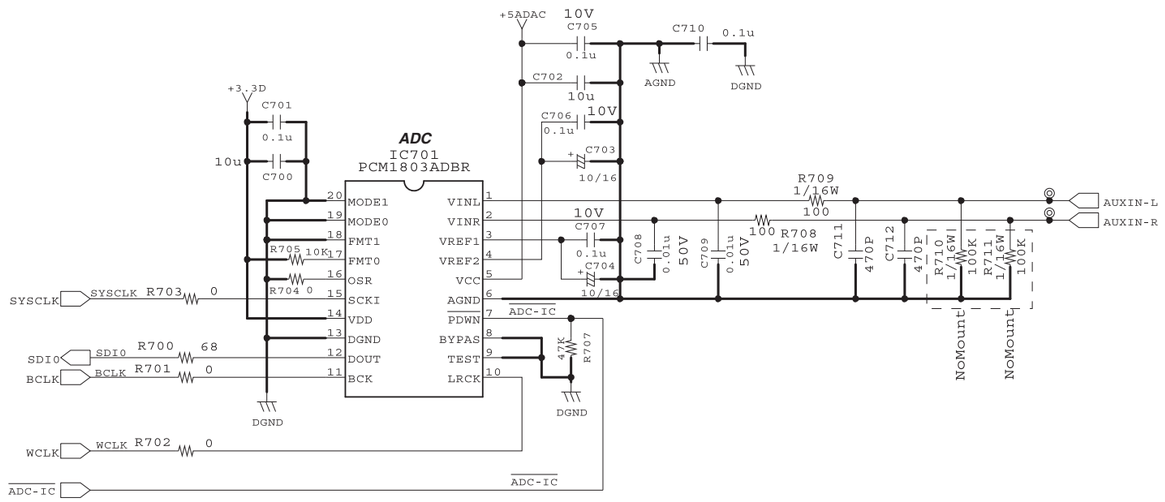
B04B-PH-SM3-TB CN432

No Mount

POWER,DAMP,DAC,ANALOG ERROR DETECTION

28CC1-2001147403-4 A2

DME **DMO**



28CC1-2001147403-5 ⚠1

reface CP/YC OVERALL CIRCUIT DIAGRAM (DME/DMO)

< Page 6 >

DME **DMO**

to PNE-CN100
PNO-CN100
<Page 8 B2,3>

to PNE-CN101
PNO-CN101
<Page 8 B3,4>

I2C/MUX

to 14Y-37MK-CN2
<Page 9 B6>

to 14Y-37MK-CN1
<Page 9 B3,4>

SUB CPU
IC600
MB9AF141LAPMC1

for Debug
FFC TE

for Writing
FFC TE

28CC1-2001147403-6

reface CP/YC/CS/DX OVERALL CIRCUIT DIAGRAM (JKE/JKOF/JKA)

< Page 7 >

JKE **JKOF** **JKA**

BATTERY 1.5×6

CN103 XH3P

DC IN

JK-DCIN_03P_01
DC-502-AG-PBT-2.0-B
JK300

To JK CN104
51048-0400
CN300

From PA-130,PA-130B (12V 0.7A)

To DCIN CN300
51048-0400
CN104

SW100 SPP32_EN_PW

TJ20A10M3 PT100

D101 RL207

L101 PLT09H 1.1uH

J100 NoMount

J101 NoMount

20u Rating 2A

L100 BLM31PG601SN1L

FG1

KDS4148U-RTK/P

TR100 2SC2412K

TR101 2SC2412K

EM100 DSS6NE32A222Q93A

D104 IC101 BA05CC0T

ISR154

EM103 DSS6NE32A222Q93A

EM102 DSS6NE32A222Q93A

UMA1A221MDD1TE

IC146 0.1uH

IC147 0.1u

IC148 0.1uH

No Mount

HPGND

CS model only

IC103 TL106

EM101 DSS6NE32A222Q93A

CN105 PH2P

R1154N050B-TR-FE

to PNA-CN103

ISA1235AC1-T112-1E/F ISA1235AC1-T112-1E/F

TR112 TR110 TR111 TR113

TR108 2SC2412K

TR109 2SC2412K

ISA1235AC1

DIN3148-RTK/P

	Ic(max)	hFE(min)
ISA1235AC1	+200mA	150@Vce=-6V
2SC2412K	150mA	120@Vce=6V

HTJ-064-04A JK101

PHONES

TR106 INC2002AC1

TR107 INC2002AC1

TR104 INC2002AC1

TR103 INC2002AC1

EM106 DSS6NB32A101Q93

EM107 DSS6NB32A101Q93

EM108 DSS6NB32A101Q93

EM109 DSS6NB32A101Q93

HTJ-064-04A JK103

OUTPUT L/MONO

HTJ-064-04A JK104

OUTPUT R

*OUTPUT Circuit
Gain:0dB
Fc=234kHz
Vo:+6.81dBu@0dBFS(RL-10kΩ)

IC100 NJM2737M-D(TE2)

OUTPUT

AUX IN

IC102 NJM4580M-D(TE2)

UMA1C100MDD1TE

UMA1C470MDD1TE

JK102 MSJ-035-10A-B-RF-PPO(YAA)

EM104 DSS6NB32A271Q93A

EM105

SUSTAIN FOOT CONTROLLER

JK100 LGR4609-7100F

L102 BK1608LM252-T

L103 BK1608LM252-T

L104 BK1608LM252-T

L105 BK1608LM252-T

DA100 DA200 DA300 DA400 DAN217

CN106 PH5P

CN100 B12B-ZR-3.4(LF)(SN)

CN101 B9B-ZR-3.4

to DME-CN431
DMO-CN431
<Page 4 B2>

to DMA-CN335
DMF-CN335

to DME-CN431
<Page 4 B2,3>

to DME-CN434
DMO-CN434
<Page 4 B3,4>

to DMA-CN330
DMF-CN330

K100 K101

28CC1-2001147410-1

reface CP OVERALL CIRCUIT DIAGRAM (PNE)

< Page 8 >

PNE

to DME-CN600 <Page 6 C2,3>

to DME-CN605 <Page 6 C3,4>

C109:Nichicon MA series
Height=5mm
EM100
DSS6NZ82A103Q93A

CN100 PH15P

CN101 PH14P

TR105 TR100 TR101 TR102 TR103 TR104 RTGN234AP-T111-1

Rb=2.2kΩ
Ic=1A(max)
hfe=200(min)

TL129 TL130 TL131 TL132 KRA226S-RTK/P TR106 TR107

Rb=2.2kΩ
Ic=-800mA(max)
hfe=56(min)
S-PNS3a
Vol(max)=0.4V@Iol=1.6mA

★PNL SW

	D[5]	D[4]	D[3]	D[2]	D[1]	D[0]
S[2]						
S[1]	DELAY	ECHO	CHORUS	PHASER	TREMOLO	WAH
S[0]	CP	Toy	Clv	Wr	Rd2	Rd1

★PNL LED

	D[5]	D[4]	D[3]	D[2]	D[1]	D[0]
L[2]						
L[1]			REVERB	DELAY/ECHO	CHORUS/PHASER	TREMOLO/WAH
L[0]	CP	Toy	Clv	Wr	Rd2	Rd1

★PNL VR

	VR[0]	VOL
	VR[1]	OCT
	VR[2]	DRIVE
TREMOLO /WAH	VR[3]	DEPTH
	VR[4]	RATE
CHORUS /PHASER	VR[5]	DEPTH
	VR[6]	TIME
DELAY /ECHO	VR[7]	DEPTH
	VR[8]	TIME
REVERB	VR[9]	DEPTH

TYPE
Rd1 LD100 SLI-343URCT32(T,U,V)
Rd2 LD101 SLI-343URCT32(T,U,V)
Wr LD102 SLI-343URCT32(T,U,V)
Clv LD103 SLI-343URCT32(T,U,V)
Toy LD104 SLI-343URCT32(T,U,V)
CP LD105 SLI-343URCT32(T,U,V)
TREMOLO/WAH LD106 SLI-343URCT32(T,U,V)
CHORUS/PHASER LD107 SLI-343URCT32(T,U,V)
DELAY/ECHO LD108 SLI-343URCT32(T,U,V)
REVERB LD109 SLI-343URCT32(T,U,V)

S[0-1],DD[0-5],LL[0-1]

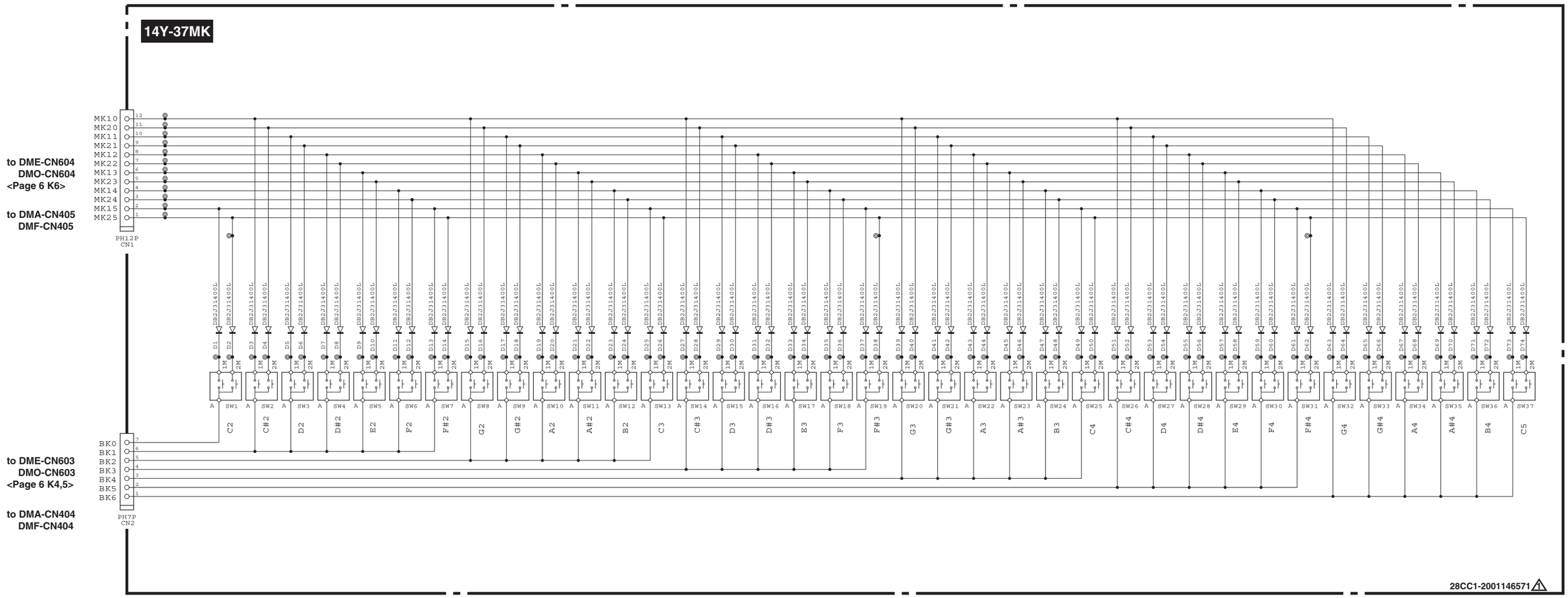
VOL VR100 RS2011AA03 KDS4148U-RTK/P
OCT VR101 RS2011CQA04 KDS4148U-RTK/P
TYPE SW100 SRBV160803 DB2J31400L D104 D105
DRIVE VR102 RK11K1130A86A KDS4148U-RTK/P
TREMOLO/OFF/WAH DEPTH VR103 RK11K1130A86A KDS4148U-RTK/P
TREMOLO SW101 B-23A1P WAH
TREMOLO/OFF/WAH RATE VR104 RK11K1130A86A KDS4148U-RTK/P
CHORUS/OFF/PHASER DEPTH VR105 RK11K1130A86A KDS4148U-RTK/P
CHORUS SW102 B-23A1P PHASER
CHORUS/OFF/PHASER TIME VR106 RK11K1130A86A KDS4148U-RTK/P
DELAY/OFF/ECHO DEPTH VR107 RK11K1130A86A KDS4148U-RTK/P
DELAY SW103 B-23A1P ECHO
DELAY/OFF/ECHO TIME VR108 RK11K1130A86A KDS4148U-RTK/P
REVERB DEPTH VR109 RK11K1130A86A KDS4148U-RTK/P

28CC1-2001147418

reface CP/YC/CS/DX OVERALL CIRCUIT DIAGRAM (14Y-37MK)

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14Y-37MK



28CC1-2001146571 ⚠1

reface CP